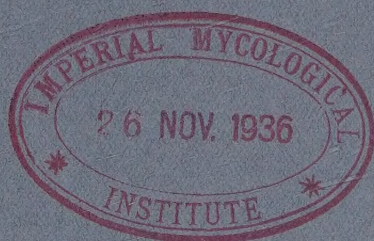


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No. 7

GOVERNMENT OF NORTHERN IRELAND
MINISTRY OF AGRICULTURE

MONTHLY REPORT.

NOVEMBER, 1936



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GOVERNMENT OF NORTHERN IRELAND
MINISTRY OF AGRICULTURE

MONTHLY REPORT

November, 1936

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MINISTRY OF AGRICULTURE

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NOVEMBER, 1936.

*The wrathful winter hastening on apace
With blust'ring blasts had all ybared the green;
And old Saturnus, with his frosty face
With chilling cold had pierced the tender green;*

With the continuance of wet and stormy weather the carrying out of seasonal farm work has been considerably handicapped. Many farmers intending to sow winter wheat have not yet found it possible to do so, and failing an early improvement in weather and soil conditions, a repetition of the state of affairs which existed last season will occur. In view of the world position regarding supplies of wheat referred to on pages 25—29 it would seem to be of considerable importance that farmers should make every effort to get even a small area of wheat sown.

Following the wet season and the general incidence of blight, the condition of potato crops still in the ground or unsorted in pits calls for immediate attention, and no opportunity should be lost of raising the potatoes which are still in the drills and of sorting those in pits, so that the healthy and sound tubers may be preserved from infection by the diseased ones. This is a most necessary precaution this season when, generally speaking, the supplies of sound marketable potatoes will be limited. An article on the potato trade outlook this season appears on page 11.

Further to the information given in Seasonal Farm Notes on page 39, it is desired to remind farmers that the manuring of grass land with phosphatic manures is a paying proposition. This work should, therefore, be done without delay as it can be carried out when the weather and soil conditions are not entirely suitable for potato raising and the sowing of wheat. The retail prices of phosphatic manures are given on page 63. Farmers will also find useful information on pages 46 to 50 regarding the compounding of rations for farm stock, and the composition of mixed rations for the different classes of animals.

The three other articles this month deal with:—

- (1) The Christmas Poultry Trade Prospects.
- (2) The Butter and Cream Marketing Scheme in Northern Ireland.
- (3) Educational Exhibits at the Sixth World's Poultry Congress.

The second article gives an account of the development of the creamery industry in Northern Ireland up to the introduction of the Scheme; whilst the third is the final of the series contributed by Mr. J. G. Rhynehart, B.Sc., F.R.C.Sc.I., D.I.C., on the World's Poultry Congress in Germany.

Readers will be interested in the short account, given on page 24, of the itinerary mapped out in connection with the Minister's visit to Australia as a Northern Ireland delegate of the Empire Parliamentary Association at the forthcoming Centenary Celebrations of the South Australian Government.

AGRICULTURAL CONDITIONS.

AGRICULTURAL CONDITIONS AT 1st NOVEMBER, 1936.

The past month was much drier than its predecessor, and favoured outdoor work on the farm to an appreciable extent. Excellent weather prevailed during the first fortnight of October, but for the remainder of the month conditions were somewhat unsettled. Much rain fell during the latter half of the month and caused flooding in some low-lying districts, whilst the severe storms which reached gale force on occasions wrought other material damage. Day temperatures during the fine open weather were high for the time of the year, but ground frosts were common at night time. The much colder weather, which the showers of hail, sleet and snow brought in their train during the late part of the month, heralded the approach of winter.

Nearly all the corn crops were gathered in during the fine spell, but the digging of the potato crop, which in early districts had progressed well during the first fortnight of October, was possible only during the short dry spells later in the month. Pastures were in very good condition up to the arrival of wet and cold weather, since when they have deteriorated in quality to varying degrees depending on the district and soil conditions. Good quality keep remained generally plentifully during the month, and the aftermath is reported to have been particularly luxuriant this season. This was of appreciable advantage, as it obviated considerably the necessity for hand-feeding. In respect of home-grown food supplies, it is understood that on most farms they will be sufficient for normal requirements, but the quality, particularly of hay and straw, will be inferior. Whilst purchased cakes and meals were plentiful during the month, prices of most of these foods continued dear in comparison with recent seasons.

All classes of cattle have made fairly good progress, but outlying stock which did not receive hand-feeding during the second half of the month, have begun to lose some of their bloom. The health of the herds is on the whole satisfactory, notwithstanding the fact that "hoose" and "red water" continued more troublesome than usual. It is reported that on account of the increase in the prices of feeding stuffs and the easier tendency of beef prices during last month, farmers were inclined to hand-feed a smaller number of stock than usual.

Sheep have made a fair thrive, and the flocks generally are in good condition. The wet season has been responsible for many cases of foot rot, whilst liver fluke disease has attacked some flocks.

THE CROPS.

WHEAT.—Harvesting and stacking were completed in the early part of the month and threshing had commenced on many farms. This latter work was, however, brought almost to a standstill by the inclement weather which prevailed during the second half of October. A fair proportion of the entire crop has now been threshed and the yields so far obtained confirm the view expressed earlier that the average for this season may be slightly below that for the last one. Straw appears to be fairly plentiful, and while the yields of grain have been satisfactory considering the general adverse weather conditions this season, the quality generally is regarded as less satisfactory than usual. In some early districts fair progress was made with the sowing of autumn varieties of wheat, but elsewhere this work has been delayed by bad weather and the lack of seed resulting from the hold-up of threshing work.

Fair supplies of wheat sold to registered merchants last month averaged $6/7\frac{1}{2}$ per cwt.

OATS.—The remaining portion of this crop was well saved during the ideal weather at the beginning of the month. Much of the late saved oats, however, was over-ripe, and besides, a large proportion of the crop had suffered damage from the wet weather at the end of September. Threshing operations continued on a larger scale, but this work is not yet general, and only comparatively slight progress was made on account of adverse weather. The returns so far indicate that the yields of grain, although variable, will be about the average. Present estimates range from 16-24 cwt. per statute acre. The quality, however, is mostly only fair. Straw also has yielded well, but generally is inferior in quality.

Considerably increased supplies of this season's crop of white oats were marketed during October, and prices averaged $5/8$ per cwt., as compared with $5/2\frac{1}{2}$ per cwt. for the corresponding month last year.

BARLEY.—The remainder of the crop was saved in good condition during the favourable conditions of the early part of the month. Threshing commenced in a few districts. On the whole this year's crop has been a good one; only a few failures were reported. Yields so far have as a general rule been up to average dimensions, and estimates range from 15 to 22 cwt. per statute acre.

FLAX.—Scutching operations continued on a small scale during last month, and yields so far have been below the average. The quality of the fibre is also stated to be less satisfactory than in recent past seasons. Medium supplies of flax were marketed during last month and prices for these ranged from 7/- to 10/- and averaged $8/10\frac{1}{2}$ per stone. The average price for October, 1935, was $8/6$ per stone.

POTATOES.—The work of digging the potato crop, which had been fairly well advanced in the first half of October, was retarded later by the wet weather and the unsuitable ground conditions. Nevertheless the major portion of the crop has been lifted, and the reports now to hand confirm, more or less, earlier expectations of lower yields than were obtained last year. The shorter growing season and the ravages caused by blight have been mainly responsible for the smaller returns in most areas and for the high proportion of small-sized and diseased tubers, particularly amongst the white varieties. As indicated in last month's report, the quantity of saleable produce this season will be less than usual.

Particulars as to supplies marketed locally and shipped, together with prices obtained last month, are furnished in a special article on this crop on pages 11 and 12.

MANGELS.—The lifting of this crop has been completed in some areas, whilst in others this work had just commenced at the end of the month. Variable accounts are to hand regarding the yields, but it is considered that on the whole the average yield will be slightly above the normal.

TURNIPS.—The condition of this crop has improved slightly of late, but the average yield will be rather lower than that for last season. There have been many failures, and rotting also will account for a fair amount of loss in this year's crops. On the other hand there are some excellent fields of turnips and, should the present rate of growth be maintained, the position as to supplies for the coming winter will be more satisfactory than foreshadowed in earlier reports.

HAY.—A fair amount of seed hay has been threshed, and the yields so far have been better than expected although the quality of the seed varies to some extent. Estimated yields range from 4 to 5 cwt. in the case of perennial grass seed, 4 to 6 cwt. for mixed perennial and italian, 4 to 7 cwt. for italian, and $1\frac{1}{2}$ to 3 cwt. for crested dogstail.

The yields of upland hay have been lighter than for last season and the quality is mostly inferior. Most of the meadow hay was, however, saved under more favourable conditions, and the returns are more satisfactory in regard to both quality and quantity.

Supplies of hay marketed last month were larger than for the previous month, and whilst the average price of meadow hay declined on the month from 48/- to 45/4 per ton, upland hay improved from 65/7 to 67/3 per ton.

Considerably increased supplies of perennial and mixed grass seeds were marketed during October, and prices were a shade below those for September at 16/4 $\frac{3}{4}$ and 10/10 $\frac{3}{4}$ per cwt. respectively. A fair quantity of italian seed averaged 10/4 $\frac{1}{2}$ per cwt.

LIVE STOCK.

CATTLE.—With the exception of some outlying stores which suffered from the rough weather at the end of October, the condition of cattle generally is satisfactory. Hand-feeding was given in many cases owing to the wet and cold weather. The health of the stock is generally good, but “red water” and “hoose” have continued to be sources of trouble. Large supplies of cattle were offered at fairs, but trade remained slow, the demand being confined to well-conditioned animals, and for these prices were firm; but for stores generally price movements had a downward tendency. Dairy cattle are in a normal and healthy condition. Calving has been satisfactory. The milk yield is showing a seasonal decline. Good supplies of dairy stock offered at fairs met a fairly good demand and prices were steady on the month. Very good quality dairy cattle were mainly sought after, and some made fancy prices.

SHEEP.—Sheep are in fairly good condition, but foot rot is very prevalent this year, and liver fluke disease has attacked a few animals. It is considered that the breeding flocks have increased slightly since last year. Small to average supplies of sheep, mostly composed of animals for breeding, were in fairly good request, and prices were maintained above last year’s level.

PIGS.—Young pigs were offered in large numbers at fairs. Trade generally was on the slow side during the month, and the average price was a little easier at 29/8 per head. Breeding sows were in fair supply and prices were little changed. Good type York sows were making from about £8 to £13 each, but the majority of the sales were effected at lower rates of from £5 10s. 0d. to £8 0s. 0d. each.

HORSES.—Trade remained keen for most types of horses last month. Foals were in keen demand and generally dearer than a year ago; the best colt and filly foals were fetching from about £16 to £25 each. This is an average increase of about £1 per head over the average for last season. Good farm horses changed hands at from £35 to £55 each, and ordinary workers at from £20 to £30 each.

MILK.—The favourable weather in the earlier part of the month and the richness of grass lands had a favourable effect on the milk yield which remained at a high level for the time of the year. Later, however, colder and rougher weather had the effect of continuing the seasonal decline in supplies. Creameries paid from 3½d. to 5½d. per gallon for milk delivered, the separated milk being returned to the farmer.

The average price paid for milk produced in Northern Ireland and delivered to creameries for manufacturing purposes was 4.42d. per gallon for the month

of September, 1936, and equalisation payments have been made at the rate of 0.58d. per gallon in order to bring the average price in respect of this month to 5d. per gallon as provided by the Milk and Milk Products Act (Northern Ireland), 1934.

It should be noted that under the regulations creameries are required to distribute the equalisation payments in accordance with the butter-fat content of the milk received from each supplier. Farmers should, therefore, bear in mind that the actual payments made to them being calculated on a butter-fat basis, may be at a rate per gallon which may vary below or above the average figure mentioned.

THE COST OF LIVING INDEX FIGURE.

The cost of living index figure at 1st October, 1936, was 48, or one point above that for the previous month. The figure at 1st October, 1935, was 45.

THE MARKETS DURING OCTOBER.

Supplies of the principal vegetables marketed last month were less plentiful than in September, and generally speaking price movements were irregular. Cabbage were $1\frac{1}{4}$ d. cheaper at $1/7\frac{1}{4}$ per dozen, and cauliflower $7\frac{1}{2}$ d. dearer at $2/0\frac{3}{4}$ d. per dozen, whilst leeks and parsley were unchanged in price at $3\frac{3}{4}$ d. and 3d. per bunch respectively. Fair supplies of carrots, parsnips, and garden turnips were marketed at Belfast, and while parsnips were $3\frac{3}{4}$ d. cheaper at $4/1\frac{1}{4}$ d. per cwt., carrots and turnips were selling at late rates at $3/6$ and $2/4$ per cwt. respectively. A greatly increased supply of savoys cheapened by $3\frac{1}{2}$ d. to $1/6\frac{1}{4}$ d. per dozen.

Farmers' butter was marketed in much smaller quantities than a month ago and prices showed further improvement. Print butter firmed by $\frac{1}{4}$ d. to $1/2\frac{1}{4}$ d. per lb., and lump butter was $\frac{1}{2}$ d. dearer at $11\frac{1}{4}$ d. per lb. Hen and duck eggs also showed a considerable decline in supply, and prices rose sharply. Hen eggs were $4\frac{1}{4}$ d. dearer at $1/2\frac{1}{4}$ per lb., and duck eggs $3/1\frac{1}{2}$ d. dearer at $13/9$ per 120.

In the poultry markets hens, chickens, and ducks were slightly less numerous. Prices were dearer. Hens increased by $\frac{1}{4}$ d. to $1/6\frac{1}{2}$ d., chickens by $\frac{3}{4}$ d. to $1/11\frac{1}{4}$ d., and ducks by 2d. to $2/0\frac{1}{2}$ d. each.

Decreased supplies of wool were offered for sale, and prices were unchanged at $6\frac{3}{4}$ d. per lb. for long unwashed wool, and 6d. per lb. for mountain unwashed wool.

PRICES OF AGRICULTURAL PRODUCE.

Table showing the Prices of Agricultural Produce in Northern Ireland during the Three Months ended 30th September, 1936, together with Comparative Figures for the same period in 1935, and the Average Prices ruling during the Third Quarter of the Years 1911-13.

COMMODITY.	Quarter ended 30th September.				Percentage increase or decrease in price as compared with the corresponding period 1911-13.	
	NORTHERN IRELAND.		ULSTER.			
	1936	1935	1911-13	1911-13	3rd Quarter, 1936	3rd Quarter, 1935
Oats (White) per cwt.	£ s. d. 0 5 10	£ s. d. 0 5 5	£ s. d. 0 7 3	£ s. d. 0 7 3	% -19.54	% -25.19
Potatoes do	0 3 1½	0 3 2½	0 3 5	0 3 5	- 8.53	- 6.7
Hay, Clover do	0 2 7½	0 2 7	0 3 5	0 3 5	- 1.83	-24.4
" Meadow do	0 16 3½	0 2 0½	0 2 10	0 2 10	- 7.35	-25.7
Grass Seed :-Perennial per cwt	0 11 11	0 11 3	0 11 7½	0 11 7½	+39.96	- 3.2
do Mixed	1 19 10	0 9 2	0 11 5½	0 11 5½	+ 4.19	-19.9
Calves (Young) per head	1 19 10	1 13 4	1 14 4	1 14 4	+16.02	- 2.9
Store Cattle, 6-12 months	6 13 7	5 17 3	4 19 1	4 19 1	+34.82	+18.3
" " 1-2 years	9 0 4	8 0 7	7 11 3	7 11 3	+19.23	+ 6.2
" " 2-3 years	11 4 0	10 11 11	10 1 7	10 1 7	+11.12	+ 5.2
Fat Cattle	13 11 7	13 5 5	13 11 0	13 11 0	- 2.22	- 2.1
" " Cows and Bulls	11 10 1	9 8 9	12 4 7	12 4 7	- 5.93	-22.8
Springers (Cows and Heifers)	15 2 1	14 11 5	14 17 10	14 17 10	+ 1.42	- 2.2
Milch Cows (down calved)	14 2 9	13 9 1	13 12 1	13 12 1	+ 3.92	- 1.1
Lambs (under 12 months)	1 6 11	1 2 9	1 2 1	1 2 1	+21.88	+ 3.0
Store Sheep	—	—	1 4 5	1 4 5	—	—
Wethers	1 1 0	0 13 0	—	—	—	—
Breeding Ewes	1 14 0	1 12 0	—	—	—	—
Fat Sheep, 1-2 years	1 7 6	1 2 6	2 0 6	2 0 6	-32.10	-44.4
" " over 2 years	1 10 5	1 9 1	2 0 3	2 0 3	-24.43	-27.7
Sows for Breeding	6 14 9	6 19 2	5 15 9	5 15 9	+16.41	+20.2
Young Pigs, 8-10 weeks old	1 9 6	1 9 7	1 8 8	1 8 8	+ 2.91	+ 3.2
Pork per cwt.	+2 15 7	+2 15 8	2 17 11	2 17 11	- 4.03	- 3.89
Butter, Farmers' "	5 2 4½	4 13 4	4 13 8	4 13 8	+ 9.32	- 0.4
Hen Eggs per lb.	0 0 9	0 0 8	*0 9 4	*0 9 4	—	—

* All Ireland price per 120.

† Average prices calculated from purchase and grading statements, allowance being made for deductions for levy and contribution charges.

As a general rule the prices of agricultural products and live stock at markets and fairs held during the quarter ended 30th September last, were higher than for the corresponding period of 1935, and in the case of live stock the average prices were mainly above those ruling before the war.

All the crop products listed, with the exception of potatoes, were dearer than a year ago, and in respect of this important crop prices were little altered. This season's grass seeds, marketed last quarter, showed the most improvement.

The most noteworthy features of the return, however, concern the prices of calves and store cattle, which improved on the year and were appreciably higher than for the pre-war period. Fat cattle sold at slightly improved rates, as also did dairy stock and all sheep classes listed. In regard to the latter, lambs (under 12 months old) recorded an appreciable increase in price on the year and were almost 22% dearer than the average for the third quarter of the years 1911/13. The general improvement in sheep prices last quarter over those for a year ago can be better appreciated when it is remembered that there has been a continued steady development in this section of the live stock industry since 1925.

Pork prices were generally similar to those ruling for the corresponding period of 1935, as were also the rates for young pigs, but sows for breeding were a little cheaper. Increased prices were obtained for farmers' butter, and hen eggs, also, were dearer last quarter than for the third quarter of 1935.

LIVE STOCK CENSUS, OCTOBER, 1936.

The fourth quarterly census of live stock was taken at the 1st October last. Returns were received from some nine thousand five hundred farmers, who supplied particulars of the numbers of live stock on their holdings at that date. These returns were compared with the numbers of live stock on the same holdings at the 1st June last, and the changes in the numbers of stock for all Northern Ireland, measured by the changes which had taken place on the farms from which returns were received.

The results of the estimate, together with the estimated number of live stock at the 1st October, 1935, and the number at the 1st June last are shown in the table below with the percentage changes which have occurred in the numbers since those dates.

	1st October, 1935	1st June, 1936	1st October, 1936	% Change as compared with	
				1st October, 1935	1st June, 1936
	No.	No.	No.		
Milch Cows ..	253,000	249,802	251,000	— 0.8	+ 0.5
Heifers in Calf ..	35,000	25,128	28,000	—20.0	+11.4
Other Cattle ..	514,000	494,723	482,000	— 6.2	— 2.6
Total Cattle ..	802,000	769,653	761,000	— 5.1	— 1.1
Ewes ..	381,000	381,526	399,000	+ 4.7	+ 4.6
Other Sheep ..	215,000	453,228	203,000	— 5.6	—55.2
Total Sheep ..	596,000	834,754	602,000	+ 1.0	—27.9
Sows ..	51,000	56,509	60,000	+17.6	+ 6.2
Other Pigs ..	461,000	465,145	519,000	+12.6	+11.6
Total Pigs ..	512,000	521,654	579,000	+13.1	+11.0

Broadly speaking the numbers of cattle and pigs at the 1st October are comparable with the figures for the 1st June, but the numbers of sheep are not comparable owing to seasonal changes in the lamb population.

THE POTATO TRADE OUTLOOK.

In Northern Ireland approximately 12 per cent. of the arable land is devoted to the cultivation of potatoes which are the principal root crop. The prospects for the coming season are, therefore, uppermost in the minds of farmers, and a short summary of the present position cannot but be of interest.

About 20 per cent. of the Northern Ireland crop is shipped each year to Great Britain and, as in the case of other agricultural produce, the prices which farmers obtain for their crops depend to a great extent on those ruling on the British market. The requirements of that market are met mainly by the home producer, whose interests are safeguarded by the restriction, by licence, of the importation of potatoes into the United Kingdom. Should, however, the aggregate supply of home-grown potatoes available to meet the requirements of the British market fall below 4,200,000 tons, imported potatoes are admitted to ensure that consumers may be able to purchase this important foodstuff at an economic price. It will thus be seen that unless foreign countries are unable to make up any deficiency in the home production prices will not tend to fluctuate widely from season to season.

Reports in respect of European countries disclose that the acreage under cultivation of potatoes and the estimated yields are well up to the average. In the Irish Free State, which is the principal exporter of main crop potatoes to Great Britain, the acreage has decreased by 1,000 acres to 335,000 acres, but no information is yet available as to the estimated yield of the crop.

The crop in Great Britain will probably be below average. In England and Wales the acreage under potatoes has decreased by 7,000 acres or 1.5 per cent. and the yield per acre on the 1st October was estimated at 5.9 tons as compared with 5.7 tons, the estimate on the 1st October, 1935, of last year's crop. Average production during the years 1926-35 has been at the rate of 6.9 tons per acre. There is an increase in Scotland of 1,000 acres or 0.8 per cent., while the yield was estimated on the 1st October last at 6.9 tons per acre, or about the same as the average for the ten years 1926-35. On the basis of these forecasts the total production of potatoes in Great Britain will be 3,605,000 tons. The final estimates usually show increases over the October estimates, but, even allowing for this, the production will be lower than the average for the last ten years, which was 4,079,000 tons. The final estimate for 1935 was 3,765,000 tons.

In Northern Ireland the area under potatoes increased by 2,725 acres to 131,740 acres, the first increase since 1932. The production, however, is expected to be appreciably below the high average yields of the last four years.

Reports indicate that potatoes of the Arran Victory variety are keeping very well. This is encouraging in view of the fact that 42 per cent. of the total acreage under potatoes is devoted to the growing of this variety.

Last season shipments of potatoes from Northern Ireland to Great Britain were 234,000 tons, as compared with 125,000 tons the previous season, and the prices obtained by growers were satisfactory. The present season promises to be equally successful, for the British market should easily be able to absorb the full Northern Ireland allotment of 200,000 tons, and this should ensure favourable returns to growers generally.

The following tables show (a) shipments to Great Britain, and (b) the prices of potatoes at Northern Ireland markets during recent weeks, together with similar information for the corresponding weeks in 1934 and 1935:—

SHIPMENTS OF POTATOES FROM NORTHERN IRELAND TO GREAT BRITAIN.

Week ended	1936	1935	1934
	Tons	Tons	Tons
5th September ..	247	671	172
12th " ..	417	517	212
19th " ..	671	880	230
26th " ..	905	919	496
3rd October ..	1,347	1,567	797
10th " ..	2,606	2,599	1,119
17th " ..	4,462	3,752	1,274
24th " ..	3,657	4,207	1,848
31st " ..	2,989	4,638	1,990
7th November ..	4,720	5,658	1,572
14th " ..	4,331	3,639	2,628

AVERAGE PRICES OF POTATOES AT REPRESENTATIVE MARKETS
IN NORTHERN IRELAND.

Week ended	Arran Victory. Per Ton.			Main Crop (All classes). Per Ton.		
	1936	1935	1934	1936	1935	1934
	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.
29th August	70 0	79 3	73 3	65 5	76 9	75 0
5th September	65 0	69 6	65 9	61 8	68 3	73 3
12th " 	73 4	68 3	63 3	71 8	65 0	66 9
19th " 	70 0	63 3	50 9	67 6	59 3	53 3
26th " 	65 0	53 0	55 9	63 9	51 9	55 0
3rd October	65 0	53 0	61 9	64 7	50 9	59 3
10th " 	69 7	53 3	60 9	67 1	51 3	58 3
17th " 	77 6	50 0	61 9	75 0	50 0	60 9
24th " 	70 10	47 6	59 3	70 10	50 6	57 6
31st " 	70 10	50 0	58 3	70 0	50 0	56 9
7th November	70 10	47 0	56 9	70 10	47 6	55 0
14th " 	69 2	46 8	56 8	70 0	46 8	55 0

CHRISTMAS POULTRY TRADE PROSPECTS

The preliminary returns for Northern Ireland agriculture taken at the 1st June last, revealed that the poultry population had reached a new high record, and for the first time exceeded the $10\frac{1}{2}$ million mark. The increase in the total number of poultry from 10,085,000 in 1935 to 10,570,000 this year was entirely accounted for by the larger number of ordinary fowl, as turkeys, geese and ducks declined in number since last year. The details show that ordinary fowl increased by 6 per cent. or by 537,614 from 9,005,120 to 9,542,734; ducks decreased by 5 per cent. or by 26,514 from 525,236 to 498,722; geese by 5.5 per cent. or by 8,122 from 147,139 to 139,017; and turkeys by 4.4 per cent. or by 17,902 from 407,175 to 389,273.

Similar statistics published by the other home countries showed that in England and Wales the total poultry population had declined as a result of decreases in the numbers of ordinary fowl and geese, as ducks and turkeys were in larger number than a year ago. Ducks increased from 2,487,000 to 2,588,000, a gain of 101,000 or 4.1 per cent.; turkeys from 684,000 to 734,000, a gain of 50,000 or 7.3 per cent.; while geese declined by 16,000 or 2.5 per cent. from 646,000 to 630,000. In respect of ordinary fowl the returns show a decrease of 1,366,000 or 5.1 per cent. amongst birds over six months old, which is but slightly counterbalanced by an increase of 482,000 or 1.5 per cent. amongst fowls under six months old.

The returns for Scotland show that the total poultry population has increased from 8,148,500 to 8,208,000 or by 0.7 per cent., and that this increase is made up of larger numbers of ordinary fowl, turkeys and geese, ducks alone declining in number on the year.

Turkeys increased by 16.4 per cent. from 81,600 to 95,000, geese by 9.7 per cent. from 23,700 to 26,000, and ordinary fowl by .8 per cent. from 7,788,500 to 7,850,000, while ducks declined by 6.9 per cent. from 254,700 to 237,000.

The only available return in respect of the Irish Free State population this year shows that all poultry have increased in number from 19,485,000 last year to 20,030,000 this year, or by 2.8 per cent. No particulars are as yet to hand as to how this increase is made up.

From these figures it would appear that whilst shorter supplies of Northern Ireland turkeys will be available for the Christmas markets, in Great Britain the position is somewhat the reverse.

Whilst these statistics govern the situation to some extent in regard to prospective British supplies, there are other important factors which will have to be taken into account. Firstly, the weather of the past season has been

generally unfavourable to the breeding of turkeys, more especially at an important stage in their development, that is, during the summer months, when very wet and cool conditions prevailed. Consequently, at least as far as Northern Ireland is concerned, the health of the birds has been rather less satisfactory than usual, "blackhead", roup and other diseases proving more troublesome, and causing losses above the normal. While the general rise in the price of feeding stuffs this season has added to the cost of production, there is no doubt that the general high standard of condition and quality of the birds will be maintained. Reports generally indicate that good supplies of Northern Ireland poultry of good quality will be available for the coming season.

Further to the general question of supplies for the cross-channel markets, it may be mentioned that imports into the United Kingdom of all poultry during the month of December fell from 177,157 cwts. in 1934 to 155,030 in 1935, and that the figure for December, 1933, was again substantially larger at 190,755. In these years the three most important suppliers were the Irish Free State, Yugo Slavia and Hungary, from which countries about 80 per cent. of the total supplies were imported. The position during the first nine months of the present year shows that supplies have decreased as compared with a similar period of 1935, and that Hungary sent the largest quantity, the Irish Free State came next, and of the other foreign countries which contributed to the total, the Soviet Union was the only supplier sending a larger quantity.

Tariff restrictions have changed but slightly since last Christmas, and it may be advisable to recall the fact that the duty on dead turkeys of 5d. per lb. is partly offset by a bounty of 3d. per lb. and that the duty of 4d. per lb. imposed on all other dead domestic fowl from the Irish Free State is offset by a bounty of 3½d. per lb. The duty on birds from foreign countries—with one exception referred to later—and from the British possessions which do not share in the Ottawa Agreements is 3d. per lb. on all dead poultry. As a result of a Trade Adjustment Agreement made between Great Britain and Yugo Slavia, following the application of trade sanctions against Italy by the countries forming the League of Nations in 1935, the duty on all poultry imports from that country was reduced to 1d. per lb. Although there was a quota restriction of 60,000 cwts. and a time limit imposed, there is sufficient margin as regards quantity and time left to ensure that this country will remain in a favourable position to dispose of supplies for the coming season. Empire countries, such as Australia, Canada and New Zealand, which participated in the Ottawa Agreements of 1932 may continue to send supplies free of duty. Another point which may have some bearing on competition from the Continent is that the Financial Agreement recently made between the U.S.A., France, and Great Britain may increase the possibilities of French competition.

THE BUTTER AND CREAM MARKETING SCHEME.

In this, the first of two articles on the creamery industry in Northern Ireland it is proposed to give an account of the development of the industry prior to the Butter and Cream Marketing Scheme. In the second article the objects and provisions of the Scheme itself will be described. While for some the current article may cover familiar ground, it is hoped that it will serve to clarify the purpose of the Scheme. Moreover as in many other constructive enterprises there is in the development of the creameries in this country a quality of adventure which appeals to the imagination and encourages repetition of its history.

Creameries were first set up in Ireland in the nineties as a result largely of the efforts of the Irish Agricultural Organization Society which was founded in 1894. The objects of this society were to organize bodies of farmers for the production, distribution and marketing of produce on co-operative lines and to advise and assist the Societies so organized in the carrying out of their work. The creameries are thus co-operative concerns engaged in Northern Ireland in the manufacture of butter and cream. Each is co-operatively controlled through an elected committee by the producers who supply it with milk. Any profits, or as they are called in this case "savings of management", are shared by the suppliers in proportion to the quantity of milk which each supplies and a further privilege which suppliers enjoy is that the separated milk is returned to them for use in the feeding of calves, pigs and poultry. The production of milk for manufacture is thus an important branch of Northern Ireland agriculture—the milk being sent to the creameries where the cream is separated and the separated milk then being used for feeding. Milk production, calf production, the feeding of pigs and poultry, are all closely interwoven and creameries have become an organic part of the system of agriculture prevailing in Northern Ireland. There are now 36 central creameries in existence in this country.

The British Government, in the first instance, and, since 1921, the Government of Northern Ireland have encouraged the development of the creamery industry. The British Government, recognising the value of the work of the Irish Agricultural Organization Society, began, in 1894, to make grants to the Society and the Department of Agriculture and Technical Instruction set up in 1899 combined with the Society in extending the creamery industry and by means of education and advice improving the methods of butter and cream manufacture. When the Government of Northern Ireland was set up in 1921 it was thought, for various reasons, desirable that on the basis of the Ulster branch of the Irish Agricultural Organization Society a new

society to be known as the Ulster Agricultural Organization Society should be formed and the Government agreed to make a grant towards its finances. To avoid overlapping between the Ministry and the Society, the functions of the latter were clearly delimited as a condition of the grant and from the outset the Ministry of Agriculture and the Society have worked in closest co-operation.

The Ministry has not only given financial support to this Society but it has attempted by schemes, by legislation and latterly by direct financial assistance to improve the quality of the creamery products and maintain the industry throughout the agricultural crisis. Its relations with the industry present three phases

- (1) from 1922 to 1931 when the marketing of Dairy Produce Act (Northern Ireland), 1929, came into operation,
- (2) from 1931 to 1934 when the Milk Industry Assistance Grant was first paid out of the British Exchequer into the Milk Fund.
- (3) from 1934 to 1936 when the Butter and Cream Marketing Scheme came into operation.

In the first phase, the Ministry was concerned by means of education and certain voluntary Schemes to improve the quality of the butter produced in creameries. In the scheme of surprise Butter inspections for instance creameries which agreed to take part were required at short notice to submit samples of their butter for inspection by officers of the Ministry who awarded marks according to the flavour, texture, general quality and appearance of the product. Northern Ireland creamery butter also underwent surprise inspections in cross-channel centres. In 1924 a supplementary scheme was introduced whereby creameries which maintained a uniformly high standard of marks in the inspections were permitted the use of an official stamp designating their product "Premium".

In view, however, of the fall in butter prices which began in 1923 and the increasingly keen competition in the British market which resulted from the free entry of highly standardised and attractively packed butter—notably from the Dominions, Denmark and the Argentine—it appeared that a more comprehensive scheme was desirable to ensure that Northern Ireland butter was at least as good and as attractive to the consumer as the imported product. Consequently in 1929 the Marketing of Dairy Produce Act (Northern Ireland) was passed providing for the registration of premises occupied in the manufacture of butter; the conditions under which butter may be manufactured at registered premises and the marking to be applied to packages of butter for export. For registration purposes there are four kinds of premises, central premises, auxiliary creameries, butter factories and wholesale depots, and an attempt is made in this measure to safeguard

particularly the position of creameries engaged in the export of butter. Thus, all butter manufactured at registered central creameries must, if exported, be marked "Northern Ireland Creamery Butter" while all butter exported from a Northern Ireland factory must be marked "Northern Ireland Factory Butter". Exported butter can only be designated "creamery butter" if manufactured at a central creamery.

Other provisions for ensuring that butter for export is of high quality are that every person exporting butter or cream must hold a licence from the Ministry; secondly that premises are registered under the Act only on condition that they are maintained in a state of cleanliness, that the power machinery and equipment are adequate and that there is a sufficient water supply available. In order to ensure that the creameries are competently managed certain qualifications are prescribed for managers, assistant managers and butter makers employed in the creameries. Provision is also made to secure a pure milk supply.

The Marketing of Dairy Produce Act, could not, however, protect the creamery industry from the ill effects of the agricultural crisis which set in in 1929, nor after 1931 was it possible, owing to the large proportion of Dominion imports in the supplies of butter to the United Kingdom to provide a sufficient measure of protection for the industry by means of tariffs or of the quantitative regulation of butter imports.

Hence when the Milk and Milk Products Act was passed in 1934 with a view to reorganizing the production and marketing of milk for Northern Ireland provision was made for the payment to creameries of a grant not to exceed £200,000 in 1934/35 in order to keep up the average price of milk sold for manufacture to creameries to 5d. per gallon in summer and 6d. per gallon in winter. This grant was obtained from the Imperial Exchequer under the Milk Act, 1934. Under the Milk and Milk Products Act (Northern Ireland), 1934, it is also provided that producers of Grade A, B and C milk who sell their milk to creameries shall receive a bonus of 2d. per gallon on Grade A and B, and 1d. per gallon on Grade C over and above the subsidised price. Thus creamery suppliers are encouraged to produce good quality milk.

The effect of the Milk and Milk Products Act has been described in detail in a previous article and is well known. Roughly 30% more milk was sold to creameries in 1934/35 than in the previous year and in 1935/36 a further increase has occurred. In addition a flourishing cream trade with Great Britain grew up amounting in 1935 to 375,796 gallons as compared with 335,294 gallons in 1934. Thus many of the aims of the Ministry and the Ulster Agricultural Organization Society had been realised at the beginning of 1936. In one direction, however, little progress had been made.

In the Year Book of Agricultural Co-operation for 1927, a writer on the Irish movement remarks:

"The Co-operative Creameries have utterly failed to co-operate with each other in a joint effort to put their products on the market through a trade federation and each sells independently of the rest with the inevitable result that while a certain number managed by capable salesmen contrive to realise fairly good prices the majority fail to realise the full value of their produce. As long as the present state of things exists even the best creameries are hindered from securing top market prices while the others have to content themselves with whatever they are offered by merchants, who are able to play off one creamery against another and make their purchases from the cheapest seller."

In the article in next month's report it is proposed to discuss this feature of the creamery industry and to show how it has been dealt with under the Butter and Cream Marketing Scheme.

EDUCATIONAL EXHIBITS AT THE SIXTH WORLD'S POULTRY CONGRESS.

Contributed by J. G. RHYNEHART.

Exhibits were staged by the following countries—Germany, Great Britain, United States of America, Denmark, Hungary, Yugoslavia, Canada, Finland, Austria, Belgium, Poland, Sweden, Norway, France, Roumania, Spain, Italy and Holland. These were accommodated in one of the large Exhibition Halls and those of the different countries, except Germany, were arranged in bays at either side of a straight passage-way which was described as "The Street of the Nations". Each bay was about 30 feet long and 20 feet deep.

A large area of the Exhibition Hall was divided off so as to form a separate central hall of oval shape inside the entrance doors with a bay at either side. In this Hall, which was called the "Hall of Honour", the main German exhibits were staged. The scene on entering this hall was most impressive. The very high ceiling through which all the natural light came was draped festoon-wise with undyed pure silk spun by silk worms in Germany. The light coming through the rich golden yellow colour of the silk gave to the Hall a soft, restful appearance, and showed up the exhibits to the best advantage. The draping was continued around the walls, and upwards of 11,000 yards of silk were required for the decoration scheme. A clever system of flood-lighting intensified the pleasantness of the general effect, and at the same time threw out in relief the main exhibits displayed. In the centre of the floor space the German love of flowers and plants was expressed in the form of a neatly-arranged "garden".

This beautifully-decorated Hall of Honour provided the ideal atmosphere in which to display exhibits to the best advantage, but, being so large, it was essential that the exhibits should also be on a large scale so as to maintain proportion. All the exhibits in this Hall were large and imposing. Generally, the type of exhibit most favoured in Germany is the cut-out model on a panel attached to a wall. What can be described as the central pieces of this exhibit were two groups of huge figures carved in wood and symbolising the importance of the soil, of agriculture and of food production to the development and attainment of the ideals of the German people as regards a vigorous populace and thriving industrial concerns.

Many of the exhibits dealt with the present organisation of the poultry industry and depicted the methods adopted by the Government for increasing production. The poultry population, the educational establishments and the advisory scheme were very effectively illustrated by means of models placed on a large-scale outline map of Germany which was made of wood and placed horizontally on a low stand. Other exhibits showed, by means of cut-out figures grouped to make a connected story, the contrast between the old and the new in respect of breeding, rearing, feeding, housing and culling. The Herd Book organisation, the Augmentation Breeding Farms, the auction sales of Herd Book Cockerels, the means by which the peasant poultry-keepers can obtain financial assistance to purchase good stock and the scope and value of the advisory system were all illustrated in a very effective way.

In regard to the feeding of poultry, an exhibit in three sections showed the changes which have taken place. In pre-war times, the feeding consisted chiefly of grain and potatoes, and egg production in winter was poor; so it was necessary to import considerable numbers of eggs. After the war egg production was started in the neighbourhood of large towns and most of the food, including expensive protein supplements, was purchased. In such circumstances, although egg production was good, the eggs were being obtained at a high cost and money was leaving the country for feeding stuffs. The next change was to the system now in vogue, namely, the concentration of egg production on the country farms where the foods for the poultry are produced, thus making it possible to produce eggs at a cheap cost for food. The importance of protein in the diet of the layer was emphasised, and the fact that skim milk would supply the needs of the hen for protein was made known to poultry-keepers everywhere. Thus the present system of feeding layers on home produced grains, potatoes and milk has developed, and with this development the necessity to import eggs and protein foods is disappearing.

From the spectacular point of view the exhibit of outstanding appeal was that in which the development of the embryo and the hatching of chicks were

demonstrated in three large, specially-constructed incubators made chiefly of glass. In the first of these incubators, the developing embryos at 24 hours, 48 hours and 72 hours of age, respectively, could be seen plainly through microscopes, even the heart beats being clearly discernible. In the second incubator the appearance of the embryos at the 7th, 12th and 18th days of incubation were shown, while in the third, the actual process of hatching could be seen.

Another exhibit of much interest was that illustrating the results from the five official German laying tests in the year 1934-35. This pictorial and diagrammatic panel included cut-out pictures of the main buildings at each test centre, of the numbers of the principal breeds of pullets under test, of the average egg production from each breed, and of the average mortality amongst the birds of each breed. The figures have already been given in the article entitled "Poultry Keeping in Germany". (See Monthly Report for September, 1936).

The organisation of the facilities provided for the training of pupils in poultry-keeping was graphically and pictorially demonstrated by an effective panel exhibit. There are four grades of trained pupils recognised and a distinct course of training is provided for each grade. The grades in ascending order are, Attendant, Assistant, Master and Instructor or Inspector.

Many of the exhibits in the Hall of Honour concerned rabbit breeding and management. This industry is an important one in Germany and is closely linked up with that of poultry keeping as regards training of pupils, advisory work, etc. There was an extremely large exhibition of rabbits in the German section of the live stock exhibits.

In addition to the exhibits staged in the Hall of Honour, Germany, through various organisations, provided numerous interesting exhibits in other sections of the Congress Exhibition. The National Association of Poultry-breeders and Herd-Book Breeders arranged an instructional exhibit in the Exhibition grounds. This comprised pens of typical birds taken from Recognised Farms, both Herd-book hens and tested herd-book cockerels. The methods practised by the Herd-book breeders were illustrated and the advantages to the peasant poultry-keeper of getting Herd-book stock were indicated. In this section correct methods of poultry keeping on peasant farms were contrasted with wrong methods through the medium of suitable exhibits.

A very interesting exhibit comprised a competition for graded eggs which were entered by the different Packing Stations in Germany. There were 53 entries and each entry comprised 100 eggs displayed, broad ends up, on a separate tray. These trays were arranged on a tiered bench and the eggs on

each were covered with a sheet of glass. Two eggs from each entry were broken by the judges into petrie dishes and left for visitors to see the internal quality. The eggs of each entrant were stamped with the official number of the Packing Station. The entries awarded 1st, 2nd and 3rd places were taken out and arranged to form a centre piece for the entire exhibit. This is a type of competition which might be worth considering for adoption at shows in Northern Ireland.

The various educational and experimental Institutions in Germany provided separate exhibits in adjoining bays. These were designed to show the facilities available and to indicate the results obtained.

Of the exhibits arranged by other countries, that provided by Great Britain was generally considered to be the most comprehensive and educational. In this exhibit more information regarding the organisation, development and outlook of the poultry industry was provided than in the exhibits of other countries. The exhibits were arranged in two Sections (1) The organisation of the industry and the specialisation that has taken place therein, (2) the organisation and work of education and research.

Some very interesting information was given on specific subjects. In the section dealing with table poultry production, the results of an experiment on the effect of egg size on profits from table chickens were shown. In this experiment 6,600 eggs from pullets of first crosses between Rhode Island Red and Light Sussex were used, and the following results were obtained :—

Group	Weight of egg hatched	Hatch-ability	Average weight of day old chicks per 100	Mortality and culls %	Average weight of birds sold	Value of marketable cockerels @ 1/2 per lb.
1	2 oz. and over	76.0	8.8 lb.	16.3	61.5 oz.	£ s. d. 187 13 2
2	1.9 oz. and under 2 oz.	74.5	8.6 lb.	21.0	58.9 oz.	169 12 8
3	1.75 oz. to 1.9 oz.	67.5	7.2 lb.	27.9	56.7 oz.	149 0 10

The results of work done at the Animal Nutrition Institute, School of Agriculture, Cambridge, on the food required to produce each pound of edible meat in the case of chickens of Light Sussex and Rhode Island Red were shown in a very effective way and created much interest. Models of dressed birds, of sizes in proportion to the weights obtained from the birds in the experiments were used to illustrate the results.

It was found—

1. The cockerel requires less food to produce 1 lb. of edible matter than the pullet does.
2. The cockerel of 5 lb. plucked weight requires more food to produce 1 lb. of edible meat than those of lesser weights in the case of the chickens of the cross used.
3. The food required to produce 1 lb. of edible meat does not vary greatly in the case of pullets between the plucked weights of $2\frac{1}{2}$ and 4 lb., in the case of the cross used.

A further section of the British exhibit was devoted to the commoner diseases of poultry. Bacillary White Diarrhoea, Fowl Typhoid, Tuberculosis and Fowl-pox were the diseases in regard to which the steps being adopted to prevent their appearance and spread were indicated. Suitable exhibits illustrated the symptoms of Fowl Paralysis and Coccidiosis, and in reference to these two it was stated that they exist in Great Britain and that research is being actively carried out into their cause and control.

The exhibit staged by Canada was “a story in pictures based on government policies formulated for the purpose of ensuring healthy vigorous stock from which poultry and eggs may be produced of a quality fit to carry Canada’s national stamp of approval to world markets”. The central feature of this exhibit was life-like cut-out pictures of Barred Plymouth Rock birds which moved slowly and continuously across the stand. At one side of the background typical Canadian scenery with poultry farms, etc., was depicted while at the other side a port with a steamer departing was shown. In the centre were scenes showing phases of government inspection and control in connection with the breeding and management of poultry, and of poultry products in Canada. One idea only, namely, that Canada can supply poultry and poultry products of standard quality, was conveyed in the exhibit.

Denmark’s exhibit was very tastefully arranged. It consisted chiefly of coloured illuminated enlargements of typical poultry farms, breeding stations, egg packing stations and **chicken fattening stations**. The central feature was a cinematograph display showing the aim of Denmark in the development of the poultry industry, scenes from typical Danish poultry farms, and the methods practised in the preparation of eggs and poultry for market.

The exhibits staged by the remaining countries illustrated the progress and development of the industry in these countries and introduced specialties of particular concern to the countries which exhibited them. For example Holland made a special feature of her brown eggs and of the breeds of poultry in that country which produce them. She also emphasised the

strict control which the Government exercises in regard to the grading, testing and packing of eggs for export. "No Dutch egg passes the boundary without being stamped with the mark of the Dutch egg control office which guarantees the high quality of the Dutch egg." Five standard grades of eggs, namely, S, A, B, C and D, are recognised in Holland. Germany has adopted the same number of grades in her packing stations. It was interesting to see on the Dutch stand a working model on lines somewhat similar to that staged by Northern Ireland at the Fourth World's Poultry Congress in London, showing the Dutch eggs coming from the producers' farms through the packing stations and to the foreign consumers. The slogan "Dutch quality eggs are collected fresh and shipped quickly" was displayed in a prominent position.

It was surprising to find such a small collection of poultry appliances and so few large commercial stands. Makers of poultry appliances in countries other than Germany were not represented and there was a noted scarcity of stands exhibiting poultry houses, hatching and rearing appliances and foods. An electrically-heated hover fitted with a humidity device was the only appliance out of the ordinary which was seen.

THE MINISTER'S AUSTRALIAN TOUR.

Sir Basil Brooke, accompanied by Lady Brooke, is at present on his way to Australia, where he will be the delegate of the Northern Ireland Branch of the Empire Parliamentary Association at the forthcoming Centenary Celebrations of the South Australian Government and the Empire Parliamentary Conference to be held in conjunction therewith.

The following places are included in Sir Basil's proposed itinerary:—

Ceylon—Colombo.

Western Australia—Perth.

South Australia—Adelaide and Port Augusta.

Victoria—Melbourne.

Canberra.

New South Wales—Sydney.

Queensland—Brisbane.

New Zealand—Auckland, Rotorua and possibly Napier.

The Minister proposes, so far as circumstances permit, to inspect farms and schools and settlements with a view to studying agricultural research and experimental work and similar developments.

It is probable that the visits of representatives of the United Kingdom and Northern Ireland Empire Parliamentary Associations will attract particular interest in Australia, where the Commonwealth and State Governments are giving earnest consideration to the question of encouraging the resumption of immigration from the home country.

It is common knowledge that Mr. W. F. Massey, who was Premier of New Zealand, was born at Limavady, County Londonderry, the son of a farmer. It is not so well known that Sir Robert R. Torrens, who was elected Premier of Australia in 1857, emigrated from County Londonderry. Sir Robert's name is associated with the famous Torrens Act, which was the basis of the reform of Australian land laws.

NOTES AND MEMORANDA.

THE WORLD WHEAT POSITION, OCTOBER, 1936.†

PRODUCTION.—Provisional estimates of the production of wheat in the Northern Hemisphere (excluding Russia, China, Iran and Turkey) are published in the September Bulletin of the International Institute of Agriculture, from which the following table has been constructed:—

WHEAT PRODUCTION IN THE NORTHERN HEMISPHERE.
MILLION CWT.

	1936 (Provisional).	1935	Average 1930-34
<i>Main Exporting Countries—</i>			
Canada	125	149	187
United States of America	337	334	392
Total	462	483	579
<i>Europe (excluding Russia)—</i>			
Exporting Countries (a)	244	207	213
Other Countries	543	636	600
Total	787	843	813
<i>Other Ex-European Countries</i>	311	326	320
Total Northern Hemisphere (b) ..	1,560	1,652	1,712

(a) Total of Bulgaria, Hungary, Roumania, Yugoslavia, Poland and Lithuania.

(b) Excluding Russia, China, Iran and Turkey.

From the foregoing table it will be seen that the total production in the Northern Hemisphere in 1936 was smaller than the low total of 1935 by nearly 6 per cent., and was nearly 9 per cent. under average. Production in the main exporting countries in North America and Europe, at 706 million cwt., was over 2 per cent. larger than in 1935 (690 million cwt.), but was 86 million cwt. or 11 per cent. under average. The reduction in total production is attributable to the generally smaller crops taken in areas other than the group of European exporting countries. The increase on the year in the production of exporting countries was due mainly to the larger crops secured in the European exporting countries. The small crop of North America, which was the fourth successive harvest of small dimensions, accounts for the decrease compared with the five-year average.

Production in Canada was 16 per cent. below the poor crop of 1935 and 33 per cent. under average, but the harvest in the United States of America, although 14 per cent. under average, was slightly larger than the small out-turn of a year ago. The spring crops in both countries were seriously affected by drought in the more important areas of production. The drought in Canada was more severe and extensive than any previously recorded, and caused an even greater reduction in the spring wheat yields than the combined effects of rust, drought and frost in 1935. The yield per acre of spring wheat was the lowest obtained in the last 29 years. The spring wheat crop of the United States of America was also very small, and ranks as the lowest of the last 25 years with the exception of the disastrous harvest of 1934. The winter wheat crop was 12 per cent. larger than in 1935, but there was an expansion of 14 per cent. in area under this crop. The quality of the North American crops, however, is reported to be very good, and this to some extent will offset the effect of diminished production.

During the past five years production in Europe has been on a larger scale than formerly and while production in 1936 was over 3 per cent. smaller than the average of the five years 1930 to 1934, it was 63 million cwt. or nearly 9 per cent. above the average of the five years 1925 to 1929. Compared with 1935, however, European crops declined by nearly 7 per cent. The combined out-turn of the exporting countries shows increases of 18 per cent. and nearly 15 per cent. respectively, compared with 1935 and the five-year average. With the exception of 1931, the harvest of these countries was the largest in the last twelve years. Crops in the remaining European countries, on the other hand, show reductions compared with 1935 and the five-year average (1930-1934) of nearly 15 per cent. and 10 per cent. respectively.

Total production in Asiatic countries (excluding China, Iran and Turkey) at 252 million cwt., was 3 per cent. less than the good crops of 1935, but was slightly above average. Official information in respect of China

indicates that production will be appreciably above the low out-turn of 1935 and the average of the preceding four years. The harvest in North African countries, at 51 million cwt., was 16 per cent. smaller than that of 1935 and 20 per cent under average.

The areas sown in Australia and Argentina show increases on last season of 5 per cent. and 22 per cent. respectively, but they are appreciably smaller than the average acreages of the preceding five years. Recent official reports state that the crop of Western Australia was seriously damaged in some parts owing to lack of rain and that deterioration took place in South Australia and New South Wales from the same cause. With an improvement in conditions compared with a month ago, however, the crop in Victoria was regarded as satisfactory. No official estimate of the Australian crop has yet been received, but commercial forecasts indicate a decline of nearly 9 per cent. on the previous harvest.

INTERNATIONAL TRADING IN 1935-36.—Details of the quantities of wheat (including flour in terms of wheat) entering into international trade during the season August, 1935, to July, 1936, based mainly on figures published in the "Corn Trade News," are shown in the following table, together with the corresponding figures in respect of the previous season.

MILLION CWT.

		Shipments. August-July.				Arrivals. August-July.	
		1935-6	1934-5			1935-6	1934-5
North America ..	..	126.3	92.5	United Kingdom ..	..	110.0	107.2
Argentina ..	..	38.2	98.0	Continent ..	..	80.1	106.5
Australia ..	..	56.9	59.9	Ex-European countries		72.8	81.4
Russia ..	..	15.9	0.9				
Danubian Countries ..	..	12.7	11.8				
India ..	..	0.4	0.2				
Other Countries ..	..	14.4	22.3				
Total ..	..	264.8*	285.6*	Total ..	..	262.9*	295.1*

*The difference between total shipments and total arrivals is accounted for by the quantities on passage.

Total shipments declined by 7 per cent., compared with last season, due mainly to reduced exports from the Southern Hemisphere. Shipments from Argentina declined by 61 per cent. (reflecting the poor harvest of 1935-36) and Australian consignments were reduced by 5 per cent. These reductions more than offset the increase in shipments from all other main sources. Exports from North America increased by nearly 37 per cent., and shipments from Russia rose from under one million cwt. to nearly 16 million cwt. Danubian shipments increased by nearly 8 per cent.

United Kingdom imports increased by over $2\frac{1}{2}$ per cent., but arrivals in European countries declined by nearly 25 per cent. Arrivals in ex-European countries fell by nearly 11 per cent. This decline was due to smaller takings by China and Japan, which fell from 34 million cwt. to under 16 million cwt., but the United States of America, with over 18 million cwt., took twice as much as in the previous season. It is of interest to note that importing countries in the American continent took nearly 55 million cwt. compared with rather under 45 million cwt. in the previous season.

As will be seen from the table above, in 1934-35 shipments for Argentina exceeded those from North America, but in 1935-36 the position was reversed owing mainly to heavier selling of Canadian supplies and a reduction in shipments from Argentina due to small crops. It is anticipated in trade circles that, during the current season, Plate wheat will be in larger demand than in 1935-36 owing to the reduction in North American supplies. Stocks in North America have been gradually diminishing in the last few seasons and, in view of the small harvest of this year, it is expected that there will be smaller quantities from that region on offer in the world market.

PRICES.—The following table shows the trend of prices at futures markets during the past three months, compared with the average price of British wheat as published in the "London Gazette."

Week ended (Wednesday)	Chicago (December Future)	Winnipeg (December Future)	Liverpool (December Future)*	British wheat (Gazette average)†
	Per cwt. s. d.	Per cwt. s. d.	Per cwt. d. s.	Per cwt. s. d.
1913				
October 22nd ..	6 4	6 1	8 5	7 2
1935				
October 23rd ..	7 8	6 8	7 6	6 2
1936				
August 5th ..	8 5	7 8	8 3	7 6
" 12th ..	8 3	7 6	8 3	7 9
" 19th ..	8 3	7 6	8 2	8 1
" 26th ..	8 3	7 3	8 1	7 9
September 2nd ..	8 1	7 1	7 11	7 3
" 9th ..	8 2	7 2	8 2	7 2
" 16th ..	8 3	7 6	8 6	7 4
" 23rd ..	8 5	7 10	8 10	7 7
" 30th ..	8 7	8 1	9 0	7 11
October 7th ..	8 8	8 2	9 0	8 3
" 14th ..	8 10	8 5	9 4	8 6
" 21st ..	8 10	8 5	9 6	8 8

* Including duty in 1935 and 1936.

† Relating to returns received during the week ended the following Saturday.

During the first five weeks of the current season futures prices declined, Chicago and Liverpool quotations falling by 4d. per cwt. and Winnipeg futures by 7d. per cwt. Thereafter prices rose steadily, the upward movement being less acute in the case of Chicago futures than in the case of quotations on the Winnipeg and Liverpool futures markets. The Chicago price rose by 9d. per cwt., while prices at Winnipeg and Liverpool increased by 1s. 4d. per cwt. and 1s. 7d. per cwt. respectively. The course of British wheat prices ("London Gazette" average) followed the general movement in futures prices a little tardily, there being an increase of 7d. per cwt. during the first three weeks of August. Three weeks later the price had fallen by 11d. per cwt., but subsequently prices rose continuously, and in the week ended October 21st the average was 1s. 6d. per cwt. above the low point reached early in September. The price of 8s. 8d. for British wheat is the highest recorded since the season of 1929-30.

All quotations in the latest week shown above are at a higher rate than at this time last year and are well above the pre-War level.

† Ministry of Agriculture and Fisheries Agricultural Market Report.

DENMARK: RISE IN AGRICULTURAL EXPORTS.*

Agricultural exports in the first three quarters of 1936 show a great advance on those of the same period of 1935, in spite of the lowering of the British bacon quota and the consequent restriction of bacon exports.

About 111,000 tons of butter were exported, i.e., over 5 per cent. more than in the same period of 1935. Exports to Germany have risen, while those to England and other markets have been somewhat smaller. Exports of cheese rose from 4.5 thousand tons last year to over 7,000 tons this year, while those of eggs rose from 46 million score to about 53 million score. Exports of both eggs and cheese to Great Britain and Germany showed an improvement.

Exports of bacon and pork amounted to 135,000 tons, or 11 per cent. less than in the same period of 1935, but the export of live pigs rose from 11,000 head last year to about 120,000 head this year. The exports of slaughtered cattle were greatly reduced, but those of live cattle were considerably increased, mainly on account of the greater number sold to Germany. As a result, the export of live and dead cattle rose from 95,000 last year to 144,000 this year.

Considerable purchases of potatoes are being made in Jutland for export to Argentina. A total consignment of 75,000 tons is contemplated in the first instance. These will be despatched in carefully made wooden boxes, each holding 50 kilogrammes.

* Market Supply Committee Notes.

EUROPEAN HOG AND PORK OUTLOOK.*

Latest hog-census data show the total numbers of pigs in the most important pig-producing countries of Europe to be approximately 5 per cent higher at the beginning of the 1936-37 production year than at the same time last year.

Outstanding among the increases in pig production is the marked upturn in hog numbers in Germany, the most important deficit country on the Continent. An appreciable increase in numbers has also taken place in Denmark, and a small increase in the Netherlands, both being important surplus-producing countries. In Hungary, from which increased quantities of lard, fatbacks, and live hogs went to deficit countries in Europe during the past year, hog numbers have declined about 17 per cent. Pig production in the British Isles, the most important deficit area in Europe, has been slightly reduced. The increased numbers in Denmark and Germany, however, more than offset the declines which have occurred in other countries.

* Foreign Crops and Markets U.S.A. Department of Agriculture.

MARKETING SCHEMES.

AGRICULTURAL MARKETING (PIG INDUSTRY) ACT (N.I.), 1934 :—

PIG PRICES FOR NOVEMBER, 1936.

The Pig Industry Council for Northern Ireland have announced the following prices for dead pigs sold by producers to curers in Northern Ireland in November, 1936. These prices are above those of last month.

Weight Class. (Dead Weight)	Grade A.	Grade B	Grade C.	U.L. or U.F.
I c.1.1.14 to c.1.2.14	64/3	61/3	58/3	55/3
II c.1.2.15 to c.1.3.14	64/3	61/3	58/3	55/3
III c.1.3.15 to c.2.0.0	61/3	58/3	55/3	52/3
IV c.2.0.1 to c.2.0.14	55/3	52/3	49/3	46/3

U.L.—Under Grade A measurements. U.F.—Over Grade C measurements.

The price for partly black pigs between c.1.1.14 and c.2.0.14 is 5/- per cwt. below the relevant grade price.

Authorised cuts :—

- (a) Broken ham (dry, shank and/or shell bone break)—5% of the gross value of the carcase.
- (b) Broken ham (wet break)—12½% of the gross value of the carcase.
- (c) Shoulder-stuck carcase—3/- per shoulder affected.

The gross value of a carcase is the product of the dead weight and the relevant grade or other price per cwt.

Where portion of a pig carcase weighing between c.1.1.14 and c.2.0.14 is condemned and the existence of disease could not reasonably have been known to the producer at the time of slaughter the appropriate grade price shall apply. If the carcase is wholly condemned on account of disease, the existence of which could not reasonably have been known to the producer at the time of slaughter, the relevant Grade B price shall apply.

The foregoing prices do not apply in the case of (a) wholly black pigs, boars, rigs or stags, sucked sows, and pig carcasses weighing under c.1.1.14 or over c.2.0.14, and (b) pigs visibly diagnosable as diseased before slaughter and subsequently condemned; emaciated or screw pigs; smelling pig carcasses with definite indications of putrefaction and pig carcasses badly abused or damaged before being handed over by the producer to the curer.

PRICES FOR WILTSHIRE PIGS SOLD ON DIRECT CONTRACT.

In the case of pigs sold alive under direct contract to Wiltshire curers the prices per dead cwt. payable for graded pigs delivered in respect of the month of November, are as follows :—

Weight Class (Dead Weight)			Grade 1.	Grade 2.	Grade 3.
Under c.1.0.14	..	..	58/3	58/3	58/3
c.1.0.14 to c.1.2.7	..	..	70/3	66/3	62/3
c.1.2.8 to c.1.2.10	..	..	67/3	63/3	59/3
c.1.2.11 to c.1.2.14	..	..	65/3	61/3	57/3
Over c.1.2.14	..	..	62/3	58/3	54/3

(The standard price, exclusive of bonus, for bacon pigs sold by contract in Great Britain during November is 12/2 per score dead weight, equivalent to 68/2d. per cwt.).

PRICES FOR LIVE PIGS SOLD TO THE PIGS MARKETING BOARD.

The following prices per live cwt. will be paid for live pigs by the Pigs Marketing Board on and from November 1, 1936, until further notice:—

Weight Class (Live Weight)	Grade 1	Grade II.	Grade III.	Unsuitable.
c.1.2.0 to c.1.3.14	53/-	50/6	48/-	41/6
c.1.3.15 to c.2.0.0	49/-	46/6	—	41/6
c.2.0.1 to c.2.1.14	46/6	44/-	—	41/6
c.2.1.15 to c.2.2.7	44/-	41/6	—	38/6
c.2.2.8 to c.2.2.21	40/6	38/-	—	34/6

These prices do not apply to live pigs outside the above weights, live pigs intended for breeding, live boars, live suckled sows, rigs or stags, injured or diseased pigs, live in-pig gilts, or live pigs sold (on contract registered with the Pig Industry Council) to curers in Northern Ireland. All other live pigs inside these weights can be sold only to the Board.

AUTHORISED DEDUCTIONS.

Every pig (dead or alive) sold to a curer or to the Pigs Marketing Board is subject to a contribution at present amounting to 1/-.

In addition to this amount, a deduction not exceeding 6d. per pig may be made in the case of sales to curers to cover insurance, so that the producer will not suffer financial loss if the carcass is condemned as unfit for human consumption.

In the case of pigs sold to the Board, there is a deduction of 2/6 per pig for marketing charges.

COST OF STANDARD PIG RATION.

The average retail cash price per cwt. of the standard ration, as calculated by the Ministry for the sixteen weeks period ended 24th October, was 8/1. This price was used, together with the realised prices of bacon and hams and of fresh meats over a set period, to determine the standard price of pigs for November.

The ration upon which the feeding cost is based is as follows:—

Barley Meal	...	...	...	30%
Maize Meal	...	...	...	40%
Pollards (White)	...	...	...	20%
Extracted Soya Bean Meal	...	...	...	5%
Meat and Bone Meal (60% Protein)	...	...	...	5%

GRADING STATISTICS.

Table showing the percentages of pig carcasses falling within the weight and grade classes indicated, during September, 1936.

Grade A.				Grade B.				Grade C.				Total
1	2	3	4	1	2	3	4	1	2	3	4	
18.24	14.37	1.88	.37	13.27	17.47	3.26	.79	5.43	9.42	1.31	.28	86.09

UNGRADED CARCASSES.

Under Grade A measurements. U.L.	Over Grade C measurements. U.F.	Wholly condemned. U1.	Wholly black, injured or damaged. U2.	Overweights, Underweights, boars, sows, etc. X.	Partly Black. Y.	
.02	3.96	.05	.73	9.12	.03	13.91
Total						100%

The above figures have been calculated from the purchase and grading statements which the curers furnish to the Ministry.

There was a marked increase in the volume of trade during September over the previous month. The average price per carcass was 1/5 above the August price at £4 11s. 0d., and the average price per cwt. 3d. dearer at £2 15s 7d. The average weight of each carcass was 2 lbs. heavier on the month at c.1.2.15

The following table gives the result of an analysis of the purchase and grading statements furnished by Wiltshire bacon curers in respect of live pigs delivered on direct contract by producers during the month of September, 1936.

Weight Class.	Grade 1.	Grade 2.	Grade 3.	Unsuitable.	Total.
Under c.1.0.14	.20	.43	.05	.02	.70
c.1.0.14 to c.1.2.7	40.23	41.35	12.79	.02	94.39
c.1.2.8 to c.1.2.10	.22	1.00	.60	—	1.82
c.1.2.11 to c.1.2.14	.20	.96	.63	—	1.79
Over c.1.2.14	.25	.40	.65	—	1.30
Total	41.10	44.14	14.72	.04	100

The average price per cwt. in respect of these deliveries works out at £3 1s. 3d. after making allowance for deductions.

The average weight works out at c.1.1.17, the net average price per pig being £4 5s. 10d.

THE CATTLE INDUSTRY (EMERGENCY PROVISIONS) ACTS, 1934 AND 1935.

In the Monthly Report for September last some particulars were given as to the average prices and weights of cattle certified for the beef subsidy up to and including the month of August of this year, and it is now possible from additional information received from the Cattle Committee to compare the numbers of cattle certified during the summer quarter of the second year of the "beef subsidy" with the corresponding period of 1935. The following figures show that the rate of increase of 5.7 per cent. in the total number of Northern Ireland cattle certified during the spring quarter of this year over the figure for last year was maintained during the summer quarter:—

Month	Steers	Heifers	Cow Heifers	Total
June, 1936	7,282	2,451	372	10,105
„ 1935	6,710	2,222	265	9,197
July, 1936	6,759	2,138	269	9,166
„ 1935	7,162	2,152	208	9,522
August, 1936 ..	7,347	2,466	226	10,039
„ 1935 ..	6,413	2,418	182	9,013
Total for Quarter, 1936	21,388	7,055	867	29,310
Total for Quarter, 1935	20,285	6,792	655	27,732

This increase compares with an increase of 8 per cent. or from 360,657 cattle in 1935, to 389,586 in 1936, shown for the whole of the United Kingdom. In England the total number increased by 5.85 per cent. from 246,193 to 260,603; in Scotland by 15.1 per cent. from 74,684 to 85,974; and in Wales by 13.7 per cent. from 12,048 to 13,699.

Comparing the total numbers of Northern Ireland cattle certified during the first year of the subsidy with the second year, it is found that there was an appreciable increase of 28.4 per cent. in the number of cattle certified during the second year. The following were the returns for each quarter and each year:—

1st Year		2nd Year	
Quarter ended	Nos.	Quarter ended	Nos.
November, 1934 ..	20,438	November, 1935	36,065
February, 1935 ..	27,382	February, 1936	39,035
May, 1935 ..	32,315	May, 1936 ..	34,119
August, 1935 ..	27,732	August, 1936 ..	29,310
Total	107,867		138,529

It will also be noted from the following statement, showing the percentage of Northern Ireland cattle certified during each quarter of each year of the subsidy that there was a more even distribution of cattle certified during the second year, and that the numbers of cattle certified during the autumn and winter months were greater than those for the spring and summer months which followed.

			September— Nov., 1934	Dec., 1934— Feb., 1935	March— May, 1935	June— August, 1935
			%	%	%	%
1st year	..	..	19.0	25.4	30.0	25.6
2nd year	..	..	26.0	28.2	24.6	21.2

The total amount paid to Northern Ireland owners as subsidy up to and including 31st October, 1936, was £552,725 12s. 6d., and was in respect of 264,684 animals. The average amount received per head of cattle certified up to that date was, therefore, £2 1s. 9d.

The return for the week ended 31st October last shows that payments to Northern Ireland owners were in respect of 3,025 animals, including 2,263 steers, 696 heifers and 66 cow-heifers. The total realised price of these animals was £38,183 9s. 0d., and the average price per head £12 12s. 0d., and per cwt. live weight 30/2. The total weight of the animals was 25,230 cwt. and the average weight of each beast 8 cwt. 1 qr. 13 lbs. The average amount of subsidy received per head was £2 1s. 10d.

MILK AND MILK PRODUCTS ACT (NORTHERN IRELAND), 1934.

JOINT MILK COUNCIL FOR NORTHERN IRELAND.

APPLICATION FOR INCREASE IN PRODUCER'S PRICE.

During the last month the producers' representatives on the Joint Milk Council renewed their application for an increase in the price payable to producers for milk sold by them for liquid consumption. The members of the Council other than the three members appointed by the Minister of Agriculture, failed to agree in regard to the application, and the matter was therefore, referred to these three members, namely, Mr. H. A. M. Barbour, M.A. (Chairman of the Council), Lieut. Col. A. B. Mitchell, F.R.C.S.I., D.L., M.P., and Captain J. Maynard Sinclair, who refused the application. Their refusal was announced in the following terms:—

“When in July last the determination of the milk prices for the twelve months commencing 1st September, 1936, was under consideration by the Joint Milk Council, the producers' representatives on the Council submitted that, in view of the increased cost of feeding stuffs, the increase in labour costs and other costs of production, producers should receive a higher price for their milk than was received by them during the twelve months ending on 31st August, 1936. At that time it was felt that it was impossible to form an opinion as to whether the tendency of feeding-stuff prices to increase was merely temporary or was likely to become more marked, and it was, therefore, agreed that, if the 1935-36 prices were continued for 1936-37, the producers position should be reviewed by the Council towards the end of October.

In pursuance of this arrangement, a meeting of the Joint Milk Council was held recently, at which the producers' representatives renewed their application for an increase in the prices payable to those whom they represented. The members of the Council, other than the members appointed by the Minister of Agriculture, failed to reach agreement in regard to this application, and the question of the re-consideration of the price was, therefore, in accordance with statute referred for decision to the three members appointed by the Minister of Agriculture.

We have given very careful consideration to the application made on behalf of producers, but have reached the conclusion that we should not accede to it, and that the prices at present operative should continue until 31st August, 1937. The grounds for this conclusion are set forth below, but before stating them we should like to say that the application made on behalf of the producers was presented in a most reasonable and temperate manner, and was based on facts which, though they justified the making of the application, did not, in our view, justify us in acceding to it.

In the first place, it was established that there has in fact been during the past few months an increase in the price of maize meal and other feeding-stuffs, and that as a result of the unsatisfactory hay harvest producers will have to use larger quantities of these commodities than would have been the case if there had been less rain during the summer. The Joint Milk Council has, however, adopted the principle that, as a matter of policy, frequent price changes should be avoided, and that it is desirable that prices should be stabilised for periods of twelve months, even though this may involve fluctuations in the producers' net return according as the costs of production rise and fall. It was, therefore, necessary for us to consider whether the increase in the cost of production due to the increased prices of feeding-stuffs was likely to be so abnormal as to counterbalance the admitted advantages to the producer of a stabilised price. With such a price, it must be remembered, the producers' net return increases, if, for any reason, the costs of production decline during the currency of the price, as for example during the long summer grazing period. The information submitted to us indicated that while there might be some increase in production costs, the increase would not be such as would justify us in making the radical changes suggested in the whole range of milk prices prescribed for Northern Ireland. While, therefore, we sympathise with the producer in the prospect that his net return upon milk sales may, perhaps for a time, be less than last year, we believe that a too great readiness on the part of the Joint Milk Council to attempt to make milk prices reflect accurately and immediately the sometimes rapid and short-lived variations in production costs would in the long run be detrimental to the best interests of the producer.

Secondly, we believe that some weight must be given to the argument that the net return of producers in Northern Ireland is not unsatisfactory when compared with that of producers in Great Britain. The larger proportion of milk sold for liquid consumption in Northern Ireland is milk of Grade B and the producer who sells milk of this Grade to a distributor receives 11½d. (less carriage charges) all the year round, whereas the average price payable last year to producers was 10.9d. per gallon in Scotland and 11.8d. per gallon (12.8d. per gallon to accredited producers) in England and Wales.

Thirdly, we have had some regard to the subsidiary question whether if the producers applications were granted, the increase in the producers price should be passed on to the consumer, or should, where the milk is retained by a distributor, be borne by the latter. We believe that any substantial increase in the retail price might result in a decline in consumption—at least, amongst those who purchase milk in small quantities from shops. The present range of prices permits milk of Grade C to be retailed in shops in Belfast at twopence per pint or a penny per half-pint; an increase in the retail price of twopence per gallon would probably—owing to the disinclination to retailers to handle farthings—involve a quite disproportionate in-

crease for those poorer members of the community who make cash purchases of milk in pints and half-pints at dairies and milk shops. Such an increase would, therefore, in our view be justified only if there were the strongest possible justification for it on other grounds.

The other alternative, namely, deduction from the distributors' margin, we have also felt that we should have been unable to adopt. At this stage the Joint Milk Council is about to undertake an investigation into the costs of milk distribution and the reasonableness of the existing carriage charges, and until the results of this investigation are available, it is considered that it would be unreasonable to make deductions in the distributors' margin, merely because the other alternative, i.e., an increase in the retail price, appeared impracticable.

Finally, we should like to deprecate the suggestion put to us in effect on behalf of certain consumers that if consumers' purchasing power is for any reason reduced, e.g., as a result of increased taxation, no increase in milk prices would on any grounds be justified. We believe that milk prices must be based primarily upon the costs of production and distribution efficiently carried out, and it is upon this principle that our decision has been based. It is, of course, true the production and distributive costs per gallon of milk vary according to the quantity of milk produced and distributed, and that, therefore, increased consumption might, in certain circumstances, counterbalance increased production or distributive costs, but this truth must be related to another, namely, that the consumer cannot continue to receive an adequate and satisfactory milk supply, unless both the producer and distributor receive a reasonable return for the services which they respectively perform."

WHEAT ACT, 1932.

REDUCTION IN QUOTA PAYMENT.

The Minister of Agriculture and Fisheries, in pursuance of the powers conferred upon him by the Wheat Act, 1932, and on the recommendation of the Wheat Commission, has made the Wheat (Quota Payments) No. 3 Order, 1936, prescribing that the amount of the quota payment which every miller and every importer of flour shall be liable to make to the Wheat Commission in respect of deliveries of flour during the period commencing the 1st November, 1936, shall be 4.8 pence per cwt. (equivalent to 1/- per sack of 280 lbs.). This is a reduction of 1/- per sack on the rate which has been in force since the 9th August, 1936.

The new Quota Payments Order comes into operation on the 1st November, 1936, and quota payments will accrue due at the new rate in respect

of all deliveries of flour taking place on or after that day. In cases where flour or bread is exported on or after the 1st November, 1936, the repayment of quota payment to the exporter will be made by the Wheat Commission at the new rate.

PAYMENTS IN ADVANCE ON ACCOUNT OF DEFICIENCY PAYMENTS FOR 1936/37.

During the past four cereal years the Wheat Commission have exercised the power given to them by the Wheat Act, 1932, and the Wheat Byelaws to make to registered wheat growers payments in advance on account of the deficiency payments that would accrue due after the end of each year. The Commission have generally made payments on account in November or December and at certain dates later in each cereal year. Making payments on account is, however, a matter which is for the discretion of the Commission. The question of making a payment on account for 1936-37 has recently been considered, but in view of the present level of wheat prices the Wheat Commission have decided not to make a payment on account during the present autumn.

AGRICULTURAL NOTES.

SEASONAL FARM NOTES.

SORTING OF POTATOES.—If the potatoes were not sorted at the time of lifting, the sorting of them should be done at the very earliest date possible. Owing to the wet weather this season the proportion of diseased tubers is higher than usual in most crops, and delay in sorting is likely to result in the spread of disease to sound tubers. Sorting early also permits of the refuse tubers being utilised for feeding purposes and facilitates the work of selecting and boxing the seed potatoes for planting next year.

BOXING OF SEED.—The boxing of seed potatoes early in the season is strongly recommended. Heavier yields and cleaner crops will be obtained if the seed is well-sprouted before planting. The initial cost of the boxes is comparatively small and, provided reasonable care is taken, the boxes will remain serviceable for a good number of years.

SEED SUPPLIES.—Farmers who intend to purchase seed potatoes should place orders for supplies as soon as possible. In this connection the advantages of planting seed from selected stocks of potatoes may again be pointed out. Freedom from diseases, such as leaf roll and mosaic, is the first essential in obtaining heavy yields, and trials carried out in Northern

Ireland have shown that crops grown from selected stocks may yield as much as three tons per acre more than those from stocks of the same variety which are severely affected with these diseases. The Inspection of growing crops was again carried out during the past summer, and lists giving the names and addresses of growers, whose crops on inspection were found to conform to the standards as regards health and purity, have now been published and can be obtained free on request. In addition, crops of potatoes, which were of a specially high standard of healthiness, have been listed separately as "Stock Seed." Farmers having stocks of potatoes which have deteriorated are strongly advised to obtain seed from selected stocks, now that supplies are plentiful and prices reasonable.

WHEAT.—If not already done, winter wheat should be sown as soon as soil conditions are suitable; late sowing invariably results in late ripening and frequently in unsatisfactory crops being obtained. A variety suitable for the type of soil should be chosen. For the average classes of soils Squareheads Master is a reliable variety, while for land in good condition Queen Wilhelmina has give good results. For very rich soils, where there is a danger of the crop lodging, Victor and Yeoman are suitable varieties. The seed should be dressed with "Ceresan" or "Agrosan G" at the rate of from 5 to 8 oz. per cwt. of seed as a preventive of smut and other seed-borne diseases.

STUBBLE LAND.—The ploughing of stubbles should be commenced when conditions are suitable. It is an advantage to use a skim coulter on the plough for land on which weeds are prevalent.

PASTURES.—The manuring of pastures, referred to in last month's Report, if not already done, should be carried out as soon as possible. Early application of manures is necessary to obtain full results in the following year's grazing. A dressing of high grade basic slag, Gafsa rock phosphate or Semsol, applied at this season at the rate of from 4 to 6 cwt. per statute acre is suitable for the purpose, and also for fields of young 'seeds.' Phosphatic manures are not washed out of the soil to any appreciable extent by winter rains and, accordingly, there is every advantage in applying the manures now and not delaying application until springtime. If the manures are not applied in good time the beneficial effects may not be apparent in next year's grazing.

DESTRUCTION OF RUSHES.—Where rushes are abundant and the land is not water-logged, considerable improvement can be effected by cutting the rushes close to the ground now and applying the dressing of phosphatic manures mentioned above. Following this treatment, the young rushes which subsequently grow, being more palatable, are eaten by stock, and further strong growth is checked. Another cutting next summer will help to weaken the growth of the rushes still further.

DRAINAGE.—Labour can be usefully employed, when slack periods occur at this time, in attending to land in need of drainage. This past wet season has afforded an opportunity of identifying those regions of fields which are in urgent need of drainage, and particular attention should be given to such areas so that improvements may be effected. The cleaning out of ditches and the removal of obstructions from choked drain outfalls will do much to improve existing conditions, but the construction of a proper system of drains is the most satisfactory method of improving water-logged areas. Farmers contemplating the draining of land are reminded that the Ministry has a loan scheme in operation under which financial assistance is given for the carrying out of approved drainage and other land improvement works. Fuller particulars regarding this scheme are given on page 59 of this Report.

SEASONAL LIVESTOCK NOTES.

WINTER RATIONS.—The importance of using suitable and economical meal mixtures for stock during the winter period is again stressed. The increased cost of feeding stuffs necessitates greater attention being paid to the making-up of rations, so that mixtures which are as economical as possible, and, at the same time, suitable for the class of stock to which they are fed, may be used.

PROPRIETARY CAKES AND MEALS.—It is still the custom on many farms to purchase proprietary mixtures of cakes and meals for stockfeeding purposes. Many of these mixtures, although they give satisfactory results cost considerably more than suitable rations of a similar nature which are made up on the farm. From the point of view of economy, therefore, farmers are advised to make up their own mixtures on the farm. To assist feeders in compounding suitable rations at home, examples of economical meal mixtures at present prices of feeding stuffs, are given on pages 50 and 51 of this Report.

If proprietary mixtures of cakes and meals are purchased, particulars regarding the percentages of oil, protein and fibre contained in them should be obtained, in accordance with the Fertilisers and Feeding Stuffs Act. The main object of this Act is to safeguard farmers when purchasing manures and feeding stuffs against being supplied with grades of unknown quality, and it is an obligation on the part of the seller to give to the purchaser a statement of analysis as indicated above. Further information relating to the purchase of proprietary mixtures are given in an article on pages 46 to 50 of this Report. As a guide to purchasers of ready-mixed rations, the average composition of suitable meal mixtures for cattle, pigs and poultry is also given in this article.

WATER SUPPLY FOR STOCK.—In addition to suitable feeding, the provision of an adequate supply of drinking water for stock, particularly for dairy cows housed during the winter, is important. A cow requires approximately 3 gallons of water for each gallon of milk produced, and if the amount of water supplied is insufficient, the milk yield will be adversely affected. A proportion of the water requirements is provided by the roots supplied, but where water is not laid on to the stalls, the animals should be given an opportunity to drink three times daily. It is a good practice to allow dairy cows out on pasture for a short time each day during the winter months when weather conditions are suitable. But this daily run out should not be relied on to provide the animals with all the water they require; if it is, the practice may result in the cows drinking too large an amount of water at one time and may, consequently, cause serious derangements.

CALF-REARING.—where supplies of separated milk are scarce, suitable substitutes should be fed to calves. It is still a common practice to rely on "patent" calf meals as substitutes for milk. While such mixtures may give satisfactory results, the price at which they are generally offered renders them uneconomical, and their use adds unnecessary expense to the cost of rearing.

Whole milk is essential for the calf during the first month or six weeks of its life and no efficient substitute has yet been found to replace milk during this period. When the calves reach the stage at which meals can be fed, a small allowance of crushed oats or a mixture of crushed oats, maize meal and bran, along with fresh separated milk, gives satisfactory results. Later, when the allowance of separated milk is being withdrawn, a little linseed cake can be added to the crushed oats or to the meal mixture. Where linseed is fed, it is of the utmost importance that this food be fed either dry or after being thoroughly boiled for at least 20 minutes prior to feeding, otherwise there is always the risk of poisoning occurring. Recently the Ministry's attention has again been drawn to a serious case of poisoning of calves which was due to feeding linseed in a partially cooked condition in gruel form. Accordingly, care should be exercised when using this food. There is no necessity to cook meals for calves or to make gruel. Many tests have shown clearly that equally good results are obtained when the meals are fed in the raw dry state after the feed of milk has been consumed. Full particulars regarding the correct methods of feeding linseed are given in Leaflet No. 19, and useful hints on calf-rearing in general are given in Leaflet No. 54.

SHEEP.—The breeding flock will benefit considerably from a little hand-feeding from now onwards; hand-feeding, as well as maintaining the flock in good condition aids in preventing possible losses from liver fluke. In

addition to the grass, a small allowance of turnips (about one per head daily) and of oats should be given. Where the grazing is of poor quality, however, it is advisable to feed a mixture of oats, bran and linseed cake at the rate of about 1 lb. per head daily.

LIVER-FLUKE DISEASE.—Readers are reminded of the importance of taking precautionary measures in good time against outbreaks of liver-fluke disease in sheep flocks. The animals should be kept off low-lying pastures and grazed on the higher well-drained fields, while dosing with carbon tetrachloride capsules should be carried out periodically. The control of this disease is dealt with fully in Leaflet No. 24.

PIGS.—Winter litters of pigs are often more difficult to rear than those farrowed during the spring and summer months. Suitable feeding, combined with good housing, will aid in producing healthy, easily-reared litters during the winter months. Sows suckling litters should be fed liberally so that the milk flow may be encouraged, while fresh green food should be provided daily. It is a wise precaution during the winter to give suckling sows an ounce (about half a wineglassful) of good quality cod-liver oil in their food and to include about a teaspoonful of this oil per head in the food of young pigs, when they start to eat. The use of cod-liver oil should be discontinued shortly after the young pigs are weaned. To prevent anaemia or bloodlessness developing in young pigs, the udders of suckling sows should be painted twice daily with a mixture of iron and copper salts and treacle throughout the suckling period. Full particulars regarding this treatment, and of the feeding of sows and young pigs are given in Leaflet No. 45. A suitable meal mixture for sows and young pigs is also given on page 50 of this Report.

SEASONAL GARDEN AND ORCHARD NOTES.

PLANTING OF FRUIT TREES.—The planting of apple trees should be carried out only when the ground is moderately dry. It is better to delay planting than to plant when the soil is in a sodden state. Cultivated soil in good condition, such as potato ground, should be selected if possible and the trees should not be more than three years old. Firm, but not deep planting, is most important, and as soon as planting has been finished, the trees should be pruned hard back. When the ground has settled, the trees should be securely staked. Plum trees, currant and gooseberry bushes, and raspberry canes may also be planted now.

PRUNING.—The pruning of established apple trees should be undertaken as soon as the leaves have fallen.

WINTER SPRAYING OF FRUIT TREES.—Materials for the winter spraying of fruit trees should be ordered in good time, and tar-distillate sprays should be applied to apple trees of the varieties Grenadier, Beauty of Bath and Newton Wonder, before the middle of January.

RHUBARB.—The old leaves of rhubarb should now be removed from the crowns, and the crowns intended for forcing should be lifted and left exposed for some days before being placed in the forcing quarters. The beds should be cleared of all weeds and lightly forked over, and the crowns protected from frost by a mulch of strawy horse manure.

WINTER CULTIVATION.—The cultivation of ground as it becomes vacant should be continued.

SEASONAL POULTRY-KEEPING NOTES.

FEEDING AND MANAGEMENT OF THE LAYING STOCK.—Every effort should be made to obtain a high level of egg production from the laying flock at this time when good prices are being obtained for eggs. The first essential for high egg production is to ensure that the birds consume adequate food for their requirements during the short winter days. A slightly heated mash, wet with separated milk if available, should be given once daily, while the dry mash hoppers should be open to the birds at all times. Examples of suitable mashes for feeding to laying hens are given on page 51 of this Report, and also in Leaflet No. 3.

GRAIN FEEDING.—Two feeds of grain, a proportion of which should consist of cracked maize, should be given daily during the winter months. A suitable grain mixture is equal parts of cracked maize and oats. If wheat is available, the mixture may consist of 2 parts cracked maize, 1 part oats and 1 part wheat. The morning feed of grain should be scattered in the house litter, while the evening allowance should be given in a trough just before the birds go to roost. During cold weather the evening feed of grain should consist of cracked maize only.

DRINKING WATER, GREENS AND SHELL. A plentiful supply of fresh clean water, green food and oyster shell or limestone grit is essential to maintain a high-level of production. Freshly cut turnip tops, cabbage or kale are suitable sources of green food. During very cold weather it is desirable to offer the water in a slightly heated state.

HOUSING.—Good housing accommodation is also essential for maximum production. The houses should be dry, well-ventilated, well-lighted, free

from draughts, and capable of providing ample scratching space. During cold wet days it is an advantage to allow the birds to remain indoors, and the house should be large enough to permit of this being done.

LITTER.—The litter should be changed frequently and never allowed to remain in the house after it has become excessively soiled and damp; dirty litter is conducive to the appearance and spread of colds amongst the birds and may also be a means of increasing infestations of insect pests. The litter in the nests should also be maintained in a fresh clean condition to prevent soiling and staining of the eggs. The provision of a patch or path of gravel or cinders outside the door of the house aids in keeping the litter and nesting material clean and in preventing the appearance of soiled and stained eggs.

BREEDING STOCK.—The birds in the breeding pens should now be fed so as to encourage egg production. If milk is available it is excellent for speeding up the start of laying and for keeping the birds in a fit condition. The addition of about 1 quart of good quality cod-liver oil to each cwt. of mash is also beneficial as it aids in improving fertility and hatchability. The grain ration for the breeding stock should contain some wheat and cracked maize.

MATING.—The birds should be mated for at least ten days before eggs for hatching are required. It is a wise plan to test fertility by setting a hatch under a hen prior to putting down incubator hatches.

HATCHING PREPARATIONS.—Preparations should now be made for hatching. Incubators should be tested to ensure that they are in proper working order. Particular attention should be paid to capsules and thermometers when testing is being done, as if the capsule is not working properly, or if the thermometer is inaccurate good hatching results will not be obtained. A ready means of ascertaining if the capsule is working is to see if it expands when held between the finger and thumb in front of a fire, or by seeing if the damper over the lamp is raised after the temperature rises in the incubator. **The accuracy of the thermometer can be ascertained by testing it against a clinical thermometer in water heated to about 100 degrees Fahrenheit.**

DISINFECTION OF INCUBATORS.—All incubators should be thoroughly cleaned and disinfected at the beginning of the hatching season and again after each hatch is completed. Disinfection may be carried out by sprinkling a solution of formalin on the felts and leaving the machine closed for a day. A suitable strength of solution is an eggcupful of formalin in a cupful of water. In addition, the incubator should be fumigated with potassium permanganate and formalin. To do this, two teaspoonfuls of potassium permanganate crystals should be put in a tin saucer placed on the egg tray

and two tablespoonfuls of formalin poured over the crystals, taking care to close up the incubator immediately. Further particulars regarding the disinfection and fumigation of incubators and chicken rearing appliances are given in Leaflet No. 59, while hints on the management of incubators are given in Leaflet No. 20.

TURKEY FATTENING.—Particular attention should be given at this time to the feeding of turkeys intended for the Christmas market. The firm white juicy flesh which is the hallmark of quality in turkeys, cannot be obtained unless the birds are fed properly. Foods such as barley meal, pollards, Sussex ground oats or finely ground oats, boiled potatoes and milk are excellent both for fattening and for the production of white flesh. Two feeds of soft mash should be fed in troughs daily and only such quantities given as will be readily cleared up at each meal. The practice of leaving excessive quantities of food before turkeys is not only a wasteful one but may also retard fattening by causing a loss of appetite in the birds. Should loss of appetite occur the omission of a meal, giving only sour milk to drink, will usually set matters right. After the evening meal of soft food has been consumed, a supply of grain should be given; this will usually be greedily eaten and will sustain the birds for some hours afterwards.

BREEDING STOCK.—Turkeys intended for retention for breeding or for sale as breeding stock, should be separated from those being fattened and fed on more bulky and less fattening foods. As the use of suitable breeding stock is absolutely essential for the production of turkeys of good quality, only the best birds should be selected for breeding purposes. While turkeys of smaller size than formerly are now in best demand, it is a grave mistake to retain under-sized and “weedy”-type birds for breeding. Such birds will inevitably produce offspring which not only would be delicate and difficult to rear, but also be of poor quality. It should be remembered that quality in a turkey is of first importance in the market.

MARKETING OF DEAD POULTRY.—Those intending to market turkeys and other fowl for the Christmas trade, dead, will find useful information on the preparation and handling of birds in Leaflet No. 18.

THE PURCHASE OF READY-MIXED RATIONS FOR STOCK FEEDING.

Various brands of ready-mixed rations for cows, calves, pigs, and poultry are now being offered for sale to farmers and poultry keepers and purchasers are sometimes concerned regarding the suitability of these for the particular purpose in view; also if they are of the composition specified and

if they are good value for money when compared with rations of similar composition which can be made up at home.

These are all very important aspects of successful feeding which the user of feeding stuffs should consider carefully before making purchases.

A particular ration may apparently give satisfactory results, but its cost may be unnecessarily high and profits thereby are reduced proportionately. The composition of a ready-mixed ration may not be such as is the most suitable for the purpose in view, and, accordingly, the ration may not give maximum returns, although being partly successful.

Purchasers of ready-mixed rations are reminded that the provisions of the Fertilisers and Feeding Stuffs Act are intended to safeguard them against being supplied with an article which is not of the nature and quality desired. Under the Act, all ready-mixed rations are regarded as compounds, and, accordingly, the percentages of oil, albuminoids (protein), and fibre, respectively, which they contain must be declared by the seller. This declaration of composition may be given on the invoice, be printed on the bag or on a label attached to the bag, or conveyed in some other form, in writing, to the purchaser. Where possible, it is preferable to purchase only those rations, the compositions of which are branded on the bags or on labels attached to the bags.

The important and valuable constituents of any feeding stuff or any mixture of feeding stuffs are oils or fats, albuminoids or proteins, carbohydrates or starches, and minerals, but, as already stated, the constituents of which the percentages are to be declared in the case of a mixed ration are oil, protein and fibre. Fibre is not a valuable nutritional ingredient like oil and protein, being largely of an indigestible nature. The lower the percentage of fibre, therefore, within reason, the more valuable will be the ration, and it is for this reason that the Act requires the percentage of fibre to be stated in the statutory statement. As many farmers are not familiar with the average composition of suitable rations for the various classes of stock, it is felt that this information will be of interest and value.

The particulars which follow are in respect of the rations recommended by the Ministry for the classes of stock specified.

For convenience, the formulae for the rations, as well as the average composition (percentages of oil, protein and fibre), are given. It should be noted that the composition of each ration as stated is that applicable in the case of rations made from foods of good average quality.

Formula (Parts by weight).	Average Composition of Mixture.
For Dairy Cows.	
(1) 3 parts crushed oats 2 parts maize meal 1 part red bran 2½ parts decorticated cotton cake or 2 parts decorticated earthnut cake	19.0 per cent. protein 5.9 per cent. oil 7.0 per cent. fibre
(2) 2 parts crushed oats 2 parts bean meal 1 part coarsely ground wheat 1½ parts decorticated cotton cake	20.0 per cent. protein 4.0 per cent. oil 7.0 per cent. fibre
(3) 2 parts maize meal 1 part pollard 1 part bran 1½ parts decorticated cotton cake, or 1½ parts soya bean meal	20.5 per cent. protein 5.0 per cent. oil 5.5 per cent. fibre
For Fattening Cattle.	
2 parts crushed oats 2 parts maize meal 1 part decorticated earthnut cake	17.0 per cent. protein 5.5 per cent. oil 5.5 per cent. fibre
For Young Growing Cattle	
2 parts crushed oats 1 part maize meal 1 part decorticated earthnut cake	19.0 per cent. protein 5.8 per cent. oil 6.4 per cent. fibre
For Fattening Pigs.	
(1) 2 parts barley meal 2 parts maize meal 2 parts pollard 1 part flaked maize 1 part bran 1 part soya bean meal with 2 lb. mineral mixture (3 parts ground lime-stone, 1 part common salt) to each cwt. meal mixture	16.2 per cent. protein 3.4 per cent. oil 4.5 per cent. fibre
(2) 3 parts barley meal 3 parts maize meal 2 parts pollard 1 part bran 1 part meat meal	17.0 per cent. protein 3.8 per cent. oil 4.0 per cent. fibre
For Sows with Litters.	
3 parts maize meal 1 part flaked maize 2 parts red bran 2½ parts brown pollard 1½ parts high grade meat meal with from 1 to 2 parts mineral mixture as above to each cwt. of meal mixture.	19.5 per cent. protein 3.6 per cent. oil 4.2 per cent. fibre
For In-pig Sows.	
4 parts maize meal 4 parts brown pollard 2 parts red bran	14.0 per cent. protein 4.0 per cent. oil 5.0 per cent. fibre

Formula (Parts by weight).	Average Composition of Mixture.
For Young Chickens.	
4 parts bran	
2 parts sharps (fine pollard)	18.2 per cent. protein
1 part Sussex ground oats	4.0 per cent. oil
1 part maize meal	6.5 per cent. fibre
1 part fish meal (60% protein)	
For Growing Birds.	
3 parts bran	13.5 per cent. protein
4 parts sharps	4.3 per cent. oil
2 parts Sussex ground oats	6.5 per cent. fibre
1 part maize meal	
$\frac{1}{4}$ part fish meal, or meat meal	
For Laying Pullets.	
(1) 4 parts pollard	17.0 per cent. protein
2 parts bran	4.5 per cent. oil
2 parts maize meal	5.0 per cent. fibre
1 part Sussex ground oats	
1 part fish meal (60% protein)	
(2) 4 parts pollard	16.8 per cent. protein
2 parts bran	4.0 per cent. oil
2 parts maize meal	5.4 per cent. fibre
1 part Sussex ground oats	
$\frac{1}{2}$ part fish meal	
$\frac{3}{4}$ part soya bean meal	
$\frac{1}{2}$ lb. common salt per cwt. meal mixture	
For Breeding Stock.	
3 parts bran	17.4 per cent. protein
2 parts pollard	3.7 per cent. oil
2 parts coarsely ground wheat	4.7 per cent. fibre
2 parts maize meal	
1 part fish meal or meat meal	
1 part ^{frank} cod-liver oil to each 4 stones of mash	

Purchasers of ready-mixed rations should, in all cases at the time of purchase, ask for the statutory statement showing the percentage of oil, protein and fibre, respectively, which the ration contains and compare the figures with those given above in respect of the ration for the particular purpose in view. If the figures differ substantially from those given above, the ration has either been prepared from foods which are not of average quality or the foods have not been blended in the proper proportions. It should be noted that the percentage of protein should be at least as high as that stated in the composition figures given above, and the percentage of oil and fibre not appreciably higher than those given. It is particularly important to see that the oil content of rations for fattening pigs is not higher than 4 per cent.

The figures of composition of the rations will also help in determining whether or not the price asked for the mixed ration is a reasonable one. It is an easy matter to determine the cost of a ton of any of the mixtures given in the above table at the current prices of the different foods comprising them. If, therefore, the ready-mixed ration of a composition similar to that of the home-mixed ration is offered at a price greatly in excess of that at which the home-mixed ration can be obtained, it is obvious that the home-mixed ration will be the more economical to use.

MEAL MIXTURES FOR FARM STOCK.

At the prices of feeding stuffs given in the Table on page 64 of this Report, the following are examples of suitable and economical meal mixtures for feeding to different classes of stock :—

Dairy Cows.

3 parts by weight	crushed oats.
2 " " "	maize meal.
1 part " "	red bran.
2 parts " "	decorticated earthnut cake.
(or 2½ " " "	decorticated cotton cake).

Fattening Cattle.

2 parts by weight	crushed oats.
2 " " "	maize meal.
1 part " "	decorticated earthnut cake.

Young Growing Cattle.

2 parts by weight	crushed oats.
1 part " "	maize meal.
1 " " "	decorticated earthnut cake.

Fattening Pigs.

3 parts by weight	maize meal.
3 " " "	barley meal.
3 " " "	brown pollards.
1 part " "	red bran.

with from 2 to 3 pints of separated milk or buttermilk per head daily. If milk is not available, 1 part high-grade meat meal should be added to the mixture given above and 1 lb. of a mineral mixture to each cwt. of meal mixture. Alternatively, extracted soya bean meal can be used to replace the meat meal. If so, 2 lb. of a mineral mixture should be used to each cwt. of meal mixture.

Sows with Litters, and young Pigs after Weaning.

3 parts by weight	maize meal.
1 " " "	flaked maize.
2 parts " "	red bran.
2½ " " "	brown pollards.
1½ " " "	high grade meat meal.
1 to 2 lb. of mineral mixture	to each cwt. of meal mixture.

If separated milk is available, the meat meal and mineral mixture should be omitted. It is advisable in all cases where separated milk is available to use it in the rations for pigs after weaning in preference to any other protein supplement.

In-Pig Sows.

4	parts	by	weight	maize	meal.
4	"	"	"	brown	pollards.
2	"	"	"	red	bran.

Where supplies of potatoes are available they can be used with advantage in rations for fattening pigs and for in-pig sows. The proportion of cooked potatoes should not exceed 2 parts to 1 part meal mixture. It is advisable when feeding potatoes to increase the milk allowance for fattening pigs to at least three pints per head daily. If milk is not available, the proportion of high-grade meat meal should be increased to 2 parts.

Laying Hens.

4	parts	by	weight	pollards	or sharps.
2	"	"	"	bran.	
2	"	"	"	maize	meal.
1	part	"	"	sussex	ground oats.

With at least $\frac{1}{4}$ pint separated milk per bird daily. If milk is not available 1 part fish meal having at least 60 per cent. protein should be added.

MINERAL MIXTURES.—The addition of mineral mixtures to the above rations is essential except in the mixture for laying hens and where milk is being fed. A suitable mineral mixture for dairy cows is equal parts by weight ground limestone or chalk, steamed bone flour and common salt, fed at the rate of 3 lb. per cwt. of meal mixture. For other cattle and for pigs the mineral mixture recommended is 3 parts by weight ground limestone or chalk and 1 part by weight common salt, fed at the rate of 2 lb. per cwt. of meal mixture.

It will be noted that red bran and brown pollards are specified in the rations for cattle and pigs. Normally red wheat offals are offered at cheaper rates than the white grades, and, provided the fibre content of the former is not excessively high, there is not much difference in feeding value and, accordingly, it is more economical to use the cheaper grades.

The rations given above may be taken as types, and they can be varied to suit particular conditions. Should any specific problem arise in connection with the making up of suitable rations for cattle and pigs, the local Agricultural Instructor will advise, on request. Similarly, the local Poultry Instructor will advise on matters relating to poultry feeding, on request.

QUALITY OF NEW CROP GRASS SEEDS.

The following information has been obtained from the Ministry's Seed Testing and Plant Disease Division, and relates to samples of this season's seed.

PERENNIAL.—Results from 151 samples show that a growth 90-92 per cent. was obtained more frequently than any other germination figure. Drying in a limited number of samples slightly improved germination.

ITALIAN.—Results from 65 samples show that a growth of 81-83 per cent. was obtained more frequently than any other germination figure. Drying did not improve germination.

MIXTURE.—Results from 56 samples show that a growth of 84-86 per cent. was obtained more frequently than any other germination figure. Drying did not improve germination.

DOGSTAIL.—Results from 6 samples show that a growth of 87-89 per cent. was obtained more frequently than any other germination figure. Drying improved germination by about 4 per cent.

In view of the adverse weather conditions at harvest the figures for Perennial are very good, being only some 2-3 per cent. lower than those for last year. Italian and Mixture, however, are materially lower in germination than last season.

ANNOUNCEMENTS AND REMINDERS.

GENERAL.

LICENSING OF BULLS AND BOARS.—Bulls which were calved during the first six months of this year must be licensed by the 31st March next. Boars which were farrowed on or before the 30th September, 1936, must be licensed by the 31st January, 1937. Applications for licences for both bulls and boars should be lodged with the Ministry as soon as possible, but not later than the 31st December next. Application forms for licences for bulls and boars may be obtained from any Police Barracks, from the Secretary, County Committee of Agriculture, or from the Ministry.

PREMIUM BULLS.—Farmers wishing to keep premium bulls in 1937 should make application immediately to the Secretary, Committee of Agriculture, for the County in which the applicant resides.

SUPPLY OF FOREST TREES.—The scheme for the supply of young forest trees from the Ministry's nurseries to farmers at reduced prices is again in operation. Full particulars will be sent, on request.

HATCHING EGGS.—Eggs for hatching may now be obtained from the County Poultry Stations. Lists giving the names and addresses of station-holders can be obtained from the Secretary of the County Committee of Agriculture free, on request.

ACCREDITED POULTRY FARMS.—Lists, giving the names and addresses of owners of Accredited Poultry Farms from which hatching eggs may be obtained, will be available towards the end of November, and will be sent free, on request, to those applying for copies.

MEETING OF POULTRY BREEDERS.—The annual meeting of poultry breeders, at which the cups, medals, etc., won at the Ministry's laying test, will be presented to the winners, will be held in Belfast on Friday, 4th December, 1937.

REPORT ON FOURTEENTH EGG-LAYING TEST AT STORMONT.—This report is now being printed, and copies will be available soon.

SCHOOLS.—The next session of the Ulster Dairy School, Cookstown, and at the North-West School, Strabane, begins on the 5th January, 1937. Further particulars regarding these Schools are given on pages 56 and 57 of this Report.

WINTER AGRICULTURAL CLASSES.

The following table gives particulars of the arrangements made by County Committees of Agriculture for Winter Agricultural Classes during the coming winter :—

County	Centre at which Class is being held	Class-room Building	Opening date of Class	Days on which class is held each week	Period of Class Session
Antrim	Aghalee	Parochial Hall	9th Nov.	Mon. & Tues.	1-30 to 6 p.m.
"	Derriaghy	Killeaton Orange Hall	11th Nov.	Wed. & Thurs.	1-30 to 6 p.m.
"	Cullybackey	R.P. Lecture Hall	2nd Nov.	Mon. & Tues.	1-30 to 6-0 p.m.
"	Ballyvoy (Ballycastle)	Parochial Hall	4th Nov.	Wed. & Thurs.	1-30 to 6-0 p.m.
Armagh	Jerrettspass	Jerrettspass Hall	9th Nov.	Mon. & Wed.	2-0 p.m. 6-30 p.m.
"	Mullabawn	The Old School	10th Nov.	Tues. & Fri.	2-0 p.m. 6-30 p.m.
Down	Hillsboro'	The Parish Hall	9th Nov.	Mon. & Tues.	1-30 to 6-0 p.m.
"	Ballygowan	The School	11th Nov.	Wed. & Thurs.	1-30 to 6-0 p.m.
"	Rathfriland	Caddell St. Auction Rooms	9th Nov.	Mon. & Tues.	1-30 to 6-0 p.m.
"	Loughbrickland	British Legion Hall	11th Nov.	Wed. & Thurs.	1-30 to 6-0 p.m.
Fermanagh	Florencecourt	Florencecourt P.O. Library	16th Nov.	Mon. & Wed.	2-0 to 6-15 p.m.
"	Kilturk (Newtownbutler)	Kilturk Old School	17th Nov.	Tues. & Thurs.	2-0 to 6-15 p.m.
Londonderry	Claudy	The Courthouse	2nd Nov.	Mon. & Tues.	2-0 to 6-10 p.m.
"	Dungiven	The Old School	5th Nov.	Thurs. & Fri.	2-0 to 6-10 p.m.
Tyrone	Gortin	The Courthouse	9th Nov.	Mon. & Wed.	1-0 to 5-15 p.m.
"	Castlederg	British Legion Hut	10th Nov.	Tues. & Thurs.	1-0 to 5-15 p.m.
"	Tullymuck	The Old School	9th Nov.	Mon. & Wed.	2-0 to 6-15 p.m.
"	Lakemount	Lakemount Hall	10th Nov.	Tues. & Thurs.	2-0 to 6-15 p.m.
"	Castlecaulfield	Parkanaur Old School	9th Nov.	Mon. & Wed.	2-0 to 6-15 p.m.
"	Minterburn	Minterburn Old School	10th Nov.	Tues. & Thurs.	2-0 to 6-15 p.m.

Young men from the districts in which the classes are being held are strongly advised to make a special effort to attend so as to gain the advantages which the courses of instruction confer. The instruction is free and there is no entrance examination. All that is necessary is to attend at the hour at which the class commences.

The following lectures have been arranged by County Committees of Agriculture :—

County	Day & Date	Centre	Time	Subject
Antrim	Thursday, 26th Nov.	Parochial Hall, Kells	8-0 p.m.	Bee-keeping and Vegetable Growing.
"	Thursday, 10th Dec.	Longstone P.E. School, Ahoghill	7-30 p.m.	" " "
Armagh	Wednesday, 18th Nov.	Jerrettspass P.E. School	do.	Poultry-keeping.
"	Wednesday, 25th Nov.	The Temperance Hall, Newtownhamilton	do.	Gardening.
"	Thursday, 26th Nov.	Cassells P.E. School	do.	Poultry-keeping.
"	Tuesday, 1st Dec.	Madden P.E. School	do.	do.
"	Thursday, 17th Dec.	Mullaghmore P.E. School	do.	do
Tyrone	Friday, 4th Dec.	Benburb P.E. School	7-0 p.m.	Manuring.
"	Friday, 11th Dec.	Dyan P.E. School	do.	do.

A class in poultry-keeping has been arranged by County Tyrone Committee of Agriculture, and will be held in Crossdernott P. E. School, Rock, commencing on Monday, 16th November, at 4.0 p.m. This class will be continued for at least three weeks.

BROADCAST TALKS.

The following talks on agricultural subjects will be given from the Belfast Station of the British Broadcasting Corporation.

Date.	Time.	Title of Talk.	Speaker.
Nov. 27th	7-30 p.m.	How to save money in the purchase of feeding stuffs.	T. Robinson, Esq., N.D.A., N.D.D., Ministry of Agriculture.
Dec. 21st	7-30 p.m.	Pig disease problems.	H. G. Lamont, Esq., M.Sc., M.R.C.V.S. Ministry of Agriculture.

SCHOOL AND COLLEGE NEWS.

ULSTER DAIRY SCHOOL, COOKSTOWN.

The third term of the year 1936 ended on the 2nd October last, and as a result of the examinations held at the end of the term the following pupils who had completed the ordinary school course of three terms, were successful in qualifying for certificates in poultry-keeping, dairying and rural housewifery :—

- Miss A. S. Aiken, 206 Albertbridge Road, Belfast.
- Miss M. Bunting, Tully, Glenarm, County Antrim.
- Miss R. G. Colbert, Schoolhouse, Sixmilecross, County Tyrone.
- Miss M. A. Gormley, Mullaghmore, Omagh, County Tyrone.
- Miss M. Lavery, Ardain, Coagh, County Tyrone.
- Miss. V. Mallon, The Bungalow, Lissan, Cookstown, County Tyrone.
- Miss I. Patrick, Lisafferty, Omagh, County Tyrone.

For the term which commenced on the 13th October, the following new pupils were admitted to begin the course of training :—

- Miss M. V. C. Bond, " Ivy House," Lackaugh, Donemana, County Londonderry.
- Miss F. Boyle, Killymaddy, Bendooragh, Ballymoney.
- Miss E. H. Brown, Ballyeglish, Moneymore, County Londonderry.
- Miss I. J. Duncan, " The Harp," Trillick, County Tyrone.
- Miss S. D. Elliott, Drumconnis, Ballinamallard, County Fermanagh.
- Miss S. M. Hamilton, Killycolp House, Tullyhogue, Dungannon, County Tyrone.
- Miss A. G. McClelland, Killymaddy, Bendooragh, Ballymoney, County Antrim.
- Miss A. G. McElroy, Corboe, Clogher, County Tyrone.
- Miss A. McGurran, Aughnahoo, Wheathill P.O., Enniskillen, County Fermanagh.
- Miss B. Maguire, Marlbank, Wheathill P.O., Enniskillen, County Fermanagh.
- Miss M. A. Moffatt, Ballyreagh, Cookstown, County Tyrone.
- Miss M. A. Mohan, Drumcrew, Newtownbutler, County Tyrone.
- Miss E. J. Shaw, Moneydolog, Ahoghill, County Antrim.
- Miss R. G. L. Watson, Mental Hospital, Downpatrick, County Down.
- Miss I. Watt, Corkhill, Rock, Dungannon, County Tyrone.

Applications for admission to the term which will begin in January next, are now being received by the Ministry, and as applications are dealt with in the order in which they are received, girls who intend to take out a course of training at this school are advised to send applications to the Ministry as soon as possible. The school prospectus contains an application form, and copies may be obtained free of charge from the Secretary of any County Committee of Agriculture, from the local Instructor in Poultry-keeping, from the Lady Superintendent, Ulster Dairy School, Cookstown, or direct from the Ministry's offices at Stormont, Belfast.

NORTH WEST SCHOOL, STRABANE.

The third term of the year 1936 ended at this school also on the 2nd October last, and there were 18 pupils in the class, all of whom held scholar-

ships awarded by the various County Committees of Agriculture. The number of scholarship holders from each county was as follows:—

County Antrim—5
 County Armagh—Nil.
 County Down—2
 County Fermanagh—3
 County Londonderry—3
 County Tyrone—5

The following pupils are now in residence at the school as scholarship holders for the term 13th October to 23rd December:—

County Antrim :

Miss M. McDonnell, Dunacalter, Ballyvoy.
 Miss M. Mulholland, Lower Ballygowan, Ballynure.

County Down :

Miss D. McBride, Tanvally, Annaclone, Banbridge.
 Miss M. J. McKeown, Drumligh, Carryduff P.O.
 Miss C. Starkie, Quarter Hill Farm, Killough.

County Fermanagh :

Miss A. E. Brown, Droghda, Killadeas, Ballinamallard.
 Miss E. McGee, Three Mile House, Tonore, Drumskinney, Kesh.
 Miss E. McGurn, Derryree, Knockaravan.
 Miss F. E. Miller, Ratoran, Tempo.

County Londonderry :

Miss J. Buchanan, Ballyshaskey, Drumahoe P.O.
 Miss T. G. McKenna, Crossland, Swatragh.
 Miss S. E. Rosborough, Killycor, Straidarran.
 Miss S. I. Smyth, Litlederry, Limavady.
 Miss C. McLaughlin, Munigh, Park.
 Miss S. McLaughlin, Munigh, Park.
 Miss B. O'Hagan, Crossland, Swatragh.

County Tyrone :

Miss O. Heslip, Tullywinney, Ballygawley.
 Miss A. McBride, Ackinduff House, Cabragh, Dungannon.
 Miss E. McLaughlin, Carndreen, Castlederg.
 Miss R. E. McQuaid, Tullyclunagh, Fintona.
 Miss R. A. Nugent, Ballintrain, Sixmilecross.
 Miss M. J. Reid, Cadian, Eglishe.
 Miss G. McBride, Chapel Street, Castlederg.

The County Committees of Agriculture are offering a limited number of free scholarships to this school for the session which will begin in January next, and girls desirous of being considered for the award of these scholarships should send in their applications as soon as possible to the Secretary of the County Committee of Agriculture for the county in which they reside. Copies of the school prospectus may be obtained free of charge from the Secretary

of the County Committee of Agriculture, the local Instructor in Poultry-keeping, the Lady Superintendent, North-West School, Strabane, or direct from the Ministry's offices, Stormont, Belfast.

GREENMOUNT AGRICULTURAL AND HORTICULTURAL COLLEGE.

The 1936/37 session opened on the 13th October, and there are now 37 students in residence at the college, 33 of whom were awarded scholarships offered by the various County Committees of Agriculture, and one a scholarship offered by the Royal Dublin Society from the funds of the Anne Hall Bequest. This scholarship was won by a County Fermanagh student. The following are the holders of these scholarships:—

County Antrim :

- J. J. E. Carson, Ferniskey, Kells.
- J. McCormick, Cushendun.
- S. McClenaghan, Ballynoe, Antrim.
- H. McKeown, Loughmegarry, Ballymena.
- J. McKendry, The Burns, Cushendun.
- J. McMullan, Kilrobert, Glenshesk.
- H. O. Nelson, Ballyhampton, Larne.*
- J. Nelson, Ballyhampton, Larne.
- M' O'Brien, Ballynadrenta, Crumlin.
- F. J. Stewart, Hillview, Cloughmills.

County Armagh :

- P. Conlon, Cornonagh, Ballsmill, Newry.
- J. J. K. Irvine, The Hollow, Keadymore, Mountnorris.

County Down :

- E. Alexander, Milverton, Saintfield.
- F. W. J. Brown, Main Street, Ballywalter.
- H. T. Colwell, Ballycopeland, Millisle.
- J. P. Crangle, Ballymartyr, Portaferry.
- R. Dodds, Tullybranigan, Newcastle.
- J. Duggan, Burrenreagh, Castlewella.
- S. Foreman, Drumalig, Boardmills, Lisburn.
- A. W. Hanna, Finnis, Dromara.
- M. McClean, Burrenbane, Castlewella.
- W. M. Shilliday, Shanrod, Katesbridge.

County Fermanagh :

- W. J. Brown, Mullygarra, Letterbreem.
- J. I. McCullagh, Springfield, Enniskillen.

County Londonderry.:

- S. Burnside, Moynock, Kilrea.
- J. K. Lynn, Dundooan, Coleraine.
- W. Morrison, Springfield, Macleary, Coleraine.
- A. Sloan, Rock House, Moynock, Kilrea.

County Tyrone :

- J. G. Breen, Tattysallagh, Omagh.
- H. A. Clements, Bankvale, Killyadroy, Beragh.
- R. S. Clements, Bankvale, Killadroy, Beragh.
- R. Duncan, Woodend, Strabane.
- R. E. Johnston, Clogher.*
- S. H. Stanley, Abercorn Square, Strabane.*

* These students have been awarded scholarships in Horticulture. All the remaining students are holders of scholarships in Agriculture.

COMPULSORY LICENSING OF BULLS.

Owners of bulls which were born in January, February, March, April, May and June, 1936, are reminded that they must be in possession of licences for their animals by the 31st March, 1937, and that applications for licences on the prescribed forms must reach the Ministry's offices not later than the 31st December, 1936. Farmers are advised not to delay but to apply immediately to the Ministry for application forms and a list of centre at which bulls will be inspected for licences.

Such forms and lists may also be procured at any police barracks. Every person who lodges on the prescribed form an application for a licence not later than the 31st December, 1936, will be notified by the Ministry regarding the actual place, date and hour, appointed for the inspection of his bull.

SCHEME FOR IMPROVEMENT OF AGRICULTURAL HOLDINGS BY DRAINAGE AND OTHER WORKS, AND FOR EXTENDING EMPLOYMENT IN RURAL AREAS.

Under the terms of this Scheme, financial assistance in the form of grants is afforded to farmers, whose holdings do not exceed a valuation of £75, to enable them to carry out approved works such as drainage of agricultural land, improvement of ditches, watercourses and river and sea embankments, land reclamation, stubbing of whins, fencing and agricultural improvements of a like nature. Grants are restricted to one half the total amount paid in wages to unemployed workmen who must be engaged especially for the work through an Employment Exchange. If required, loans may also be obtained to supplement the grants made under this Scheme.

Full particulars of the Scheme and a form of application for grant may be had on application to the Ministry of Agriculture, Stormont, Belfast.

FIFTEENTH EGG-LAYING TEST AT STORMONT.

The 145 pens of pullets accepted for this test arrived at the test grounds on the 25th and 26th September and the test period commenced on the 2nd October. The first four weekly period ended on the 29th October and particulars of the leading pens in each section on that date are given hereunder.

A satisfactory start with egg production has been made by the majority of the pens, the flock average based on the 870 birds being 11.7 eggs per bird for the period of 28 days. The average for the corresponding period of the previous test was 11.9 eggs per bird. The White Wyandottes as a group have as usual given a lead to the other breeds, those in Section 5 (a) having the highest sectional average at 15.7 eggs each and those in Section 1 the next highest, at 13.7 eggs each. A pen of Rhode Island Reds, owned by Mr. R. J. O'Hanlon, Violet Cottage, Unshinagh, Portadown, is, however, the leading pen in the entire test, but is being challenged by the leading pen of White Wyandottes in Section 5 (a) belonging to Mrs. M. Rodgers, Ballyginney, Dundrum, which has only two scoring eggs less.

Seven birds died during the period; this represents a mortality rate of 0.8 per cent.

SECTION 1. WHITE WYANDOTTES (OPEN).

Position.	No. of pen.	Name and Address of Owner.	No. of eggs laid.				Test Score
			Super Grade	1st Grade	2nd Grade	Below 2nd Grade	
1	13	Mrs. J. R. Jackson, Fortview, Coleraine, Co. Derry.	21	63	38	1	84
2	24	Mr. R. Tolerton, Holborn Hall Plantation, Lisburn, Co. Down	21	46	12	—	67
3	27	Mrs. H. E. Stevenson, Dreemore, Dungannon, Co. Tyrone	22	44	41	7	66
4	22	Mr. J. C. Stewart, Balloo, Killinchy, Co. Down.	39	26	17	4	65

SECTION 2. WHITE LEGHORNS (OPEN).

1	34	Mr. T. J. McMillan, Crossgar, Co. Down.	9	44	27	4	53
2	32	Mr. D. Freeland, Craigavad, Co. Down.	9	42	40	3	51
3	33	Mrs. E. Johnston, Craigboy, Donaghadee, Co. Down.	18	28	14	—	46

SECTION 3. RHODE ISLAND REDS (OPEN).

Position.	No. of pen.	Name and Address of Owner.	No. of eggs laid.				Test Score
			Super Grade	1st Grade	2nd Grade	Below 2nd Grade	
1	60	Mr. R. J. O'Hanlon, Violet Cottage, Unshinagh, Portadown, Co. Armagh.	36	54	4	—	90
2	53	Miss J. A. Irwin, Mount Irwin, Tynan, Co. Armagh.	27	51	7	—	78
3	59	Mrs. J. McNeill, Drain's Bay, Larne, Co. Antrim.	71	6	1	—	77
4	66	Mr. M. Scott, Crumlin, Co. Antrim.	16	61	14	7	77
	62	Mrs. D. Patterson, Ballycastle Road, Coleraine, Co. Derry.	16	61	50	3	77

SECTION 4. ANY OTHER PURE BREED (OPEN).

1	75	Mrs. M. Finlay, Langfield, Armoy, Co. Antrim. (Light Sussex.)	20	48	36	—	68
2	86	Mr. R. Holmes, Moneycarrie, Killykegan, Coleraine, Co. Derry. (Buff Rocks)	21	42	39	6	63
3	74	Miss M. Crowe, Knappagh, Killylea, Co. Armagh. (Light Sussex)	25	30	18	1	55

SECTION 5(a). WHITE WYANDOTTES (STATION HOLDERS).

1	99	Mrs. M. Rodgers, Ballyginney, Dundrum, Co. Down.	40	48	39	2	88
2	101	Mrs. M. J. Veitch, Knockninny, Thompson's Bridge, Co. Fermanagh.	17	63	8	—	80
3	93	Mr. C. E. Croke, The Rocks, Blaney, Enniskillen, Co. Fermanagh.	6	64	54	4	70

SECTION 5(b). WHITE LEGHORNS (STATION HOLDERS).

1	112	Mrs. M. Noble, Roundpark House, Lisnaskea, Co. Fermanagh.	17	59	30	2	76
2	111	Mrs. J. Knox, Shanmullagh, Ederney, Co. Fermanagh.	20	35	6	1	55
3	105	Mrs. J. Brown, Gorsebank, Culcrum, Co. Antrim.	12	28	32	3	40

SECTION 5(c). RHODE ISLAND REDS (STATION HOLDERS).

Position.	No. of pen.	Name and Address of Owner.	No. of eggs laid.				Test Score
			Super Grade	1st Grade	2nd Grade	Below 2nd Grade	
1	124	Mrs. R. McGiffert, Rathcunningham, Toye, Co. Down.	13	68	15	2	81
2	117	Mrs. R. J. Dunn, Ballyskeagh, Artigarvan, Co. Tyrone.	18	61	12	—	79
3	115	Mrs. H. H. Dickson, Lower Coagh, Coagh, Co. Tyrone.	19	48	13	—	67
4	122	Mrs. W. McCallum, Aldohil House, Newtownstewart, Co. Tyrone.	17	50	29	2	67

SECTION 6. POULTRY CLUBS AND YOUNG FARMERS CLUBS.

1	145	Saintfield Young Farmers' Club. (Rhode Island Reds)	19	49	23	—	68
2	137	Ballywalter Young Farmers' Club. (White Wyandottes)	18	48	21	3	66
3	135	Aghadowey Poultry Club. (Rhode Island Reds)	14	52	26	9	66
4	144	Newtownards Poultry Club. (Rhode Island Reds)	35	22	11	1	57

The "test score" means the total of the super grade and first grade eggs laid. The minimum weight of a super grade egg is $2\frac{1}{4}$ ozs., and of a first grade egg 2 oz. The minimum weight of a second grade egg is $1\frac{3}{4}$ oz.

Of the 10,209 eggs produced during the period, 5,641 were scoring eggs (super grade and first grade), 3,890 second grade and 678 below second grade. The percentages of the three classes of eggs were, therefore, Scoring eggs 55.2 per cent., second grade 38.1 per cent. and under second grade 6.6 per cent. In the previous test the percentage of scoring eggs laid during the first period was 58.7 per cent.

SUCCESS OF NORTHERN IRELAND APPLE GROWERS AT THE IMPERIAL FRUIT SHOW.

At the Imperial Fruit Show which was held at Liverpool from 30th October to 7th November, 1936, two Northern Ireland growers of apples competed in Class 10 of the United Kingdom Section. Each entry consisted of four boxes of Bramleys Seedling apples. Altogether there were

nine entries in this Class, the other seven coming from various parts of the fruit growing districts of England. The first prize was awarded to the exhibit entered by the Kent Farm Institute, Borden, Sittingbourne, Kent. The second prize was awarded to the exhibit entered by Mr. Hugh Suffern, Ballyclan House, Crumlin, Co. Antrim; and the third to the exhibit entered by Mr. George Scott, Annaclare, Co. Armagh. The following were the points awarded:—

	Packing	Fruit	Total
Kent Farm Institute	40 $\frac{1}{2}$	53 $\frac{1}{4}$	93 $\frac{3}{4}$
Mr. H. Suffern	40 $\frac{3}{4}$	52 $\frac{1}{2}$	93 $\frac{1}{2}$
Mr. G. Scott	39	52	91

It is seen that there was only $\frac{1}{4}$ mark between the total marks of the 1st and 2nd prize winners and that Mr. Suffern's exhibit actually was awarded a higher mark for packing than that which won first prize. Messrs. Suffern and Scott deserve great credit for this enterprise which has proved that Northern Ireland can produce apples of the Bramleys Seedling variety equal to those grown in England and that the standard of packing the fruit is equally high.

THE RANGES OF RETAIL PRICES OF PHOSPHATIC MANURES IN NORTHERN IRELAND.

	Price per Ton.
Basic Slag (18% P.A.) ..	£3-11- 0 to £4- 0- 0
Gafsa Rock Phosphate (26% P.A.)	£2-10- 0 to £3- 0- 0
Semsol (5% S.P.A., 15 $\frac{1}{2}$ % P.A.)	£2-17- 6 to £3-10- 0
Superphosphate (16% S.P.A.) ..	£3- 5- 0 to £3-10- 0
P.A.—Phosphoric Acid.	S.P.A.—Soluble Phosphoric Acid.

PRICES OF FEEDING STUFFS.

The following table shows the average retail prices per cwt. of Feeding Stuffs at 1st November, 1936, with comparative figures for the corresponding date in 1935.

	1936.				1935.			
	Price per cwt.	Protein equivalent	Price per unit of starch equivalent	Price per unit of protein equivalent	Price per cwt.	Protein equivalent	Price per unit of starch equivalent	Price per unit of protein equivalent
STARCHY FOODS:								
Maize (whole)	s. 6 6½	d. 6.8	s. 81.5	d. 1	s. 4 11	d. 6.8	s. 81.5	d. 1
Maize Meal ..	6 10½	6.8	81.5	7 8	5 3	6.8	81.5	1 2
Bran, Red ..	9 0	10.0	45.3	3 6	7 1	10.0	45.3	1 3
Bran, White ..	8 0	11.0	45.3	4 0	8 4	10.0	45.3	3 2
Pollard, Brown ..	8 11	11.0	71.2	2 3	7 2	11.0	71.2	3 8
Pollard, White ..	8 5	11.0	71.2	2 6	8 2	11.0	71.2	2 0
Barley Meal ..	5 7½	6.2	69.7	2 5	7 1	6.2	69.7	2 0
Oats ..	8 10	9.6	72.0	1 11	5 4	7.6	60.0	1 9
Wheat (Whole) ..	11 3	25.0	71.8	3 2	10 4	25.0	71.8	2 11
PROTEIN FOODS:								
Linseed Cake, home-made	10 3½	25.0	71.8	2 10	9 3	25.0	71.8	2 7
Linseed Cake, foreign ..	10 6	25.0	72.8	2 11	9 8	25.0	72.8	2 8
Linseed Cake Meal ..	9 5½	35.0	71.2	2 8	9 0	35.0	71.2	2 6
Cotton Cake, decorticated	7 6	17.0	39.2	3 10	6 4	17.0	39.2	3 3
Earth Nut Cake, decorticated	9 5	41.0	73.0	2 7	8 6	41.0	73.0	2 4
Soya Bean Meal (extracted)	10 7½	38.0	64.0	3 4	8 10	38.0	64.0	2 9
Fish Meal (60% protein)	15 10	53.0	58.9	5 5	15 10	53.0	58.9	5 5
Meat and Bone Meal (40% protein)	10 0½	36.2	44.0	4 7	9 3	36.2	44.0	4 3
Meat and Bone Meal (60% protein)	14 4	54.9	61.3	4 8	14 6	54.9	61.3	4 8
OTHER FEEDING STUFFS:								
Linseed, whole ..	15 5	19.0	119.2	2 7	15 0	19.0	119.2	2 6
Palm Nut Cake ..	8 1	17.0	70.2	2 4	7 10	17.0	70.2	2 3
Palm Nut Meal ..	8 2	17.0	78.0	2 1	7 11	17.0	78.0	2 0
Potatoes ..	3 6	0.6	18.0	3 11	2 6	0.6	18.0	2 9
Oat Straw ..	2 0	0.9	20.0	2 0	1 8	0.9	20.0	1 8
Meadow Hay ..	2 2½	4.6	37.0	1 2	1 10	4.6	37.0	1 0

PRICES OF FEEDING STUFFS.

One of the objects of the foregoing table is to guide farmers in the economic purchase of feeding stuffs.

Ignoring their mineral content, the valuable constituents of any feeding stuff, whether home-grown or purchased, consist of:—

(1) Carbohydrates—a group of substances which include materials such as starch, sugar, etc. They supply heat or energy to the animal, and the surplus is stored by the animal as fat.

(2) Oil—which also provides heat or energy, the surplus being stored as fat. For this purpose oil is approximately $2\frac{1}{2}$ times as valuable as the carbohydrates, but its presence in the ration in excessive quantities may lower the digestibility of the ration and cause digestive troubles.

(3) Protein—The group of bodies termed protein or albuminoids contain nitrogen. Protein is the only ingredient of a feeding stuff which can produce flesh or muscle, and hence its special importance.

All animals require a certain amount of each of the above constituents, but the relative amounts depend upon the class of stock. Thus, for example, a two-year-old fattening bullock requires a relatively small amount of protein (flesh forming material). Its ration should consist mainly of foods rich in carbohydrates, i.e., fat producing substances. On the other hand, a dairy cow is producing milk, which is a substance rich in protein, and as the protein, that is flesh forming material in milk, can only be derived from the protein in the food, the ration for the dairy cow must contain considerably more protein than that for the fattening bullock.

There are very wide differences in the composition of feeding stuffs, both home grown and purchased. Some, such as oats and maize, are rich in carbohydrates, and, therefore, particularly valuable for fattening purposes, whilst others, such as decorticated cotton cake, earthenut cake and linseed cake, are rich in protein, and are chiefly valuable for their flesh and milk-producing properties.

In the following table the composition of some of the more commonly used feeding stuffs is shown:—

PERCENTAGE COMPOSITION.

	Water.	Protein.	Oil.	Carbohydrates.
Turnips (Swedes)	88	1	0.2	9
Potatoes	75	2	0.1	21
Oat Straw	14	4	2	37
Meadow Hay	10	10	3	45
Pasture Grass	80	3.5	0.8	10
Cabbage	89	1.5	0.5	8
Fattening Foods :				
Oats	13	9	6	60
Maize Meal	12	10	4	70
Barley Meal	13	12	2	66
Flesh Forming Foods :				
Linseed Cake	11	30	10	35
Decorticated Cotton Cake	9	40	9	26

The farmer frequently asks what is the cheapest feeding stuff to buy. It is, however, often very difficult to give a direct answer. Much depends upon what the feeding stuff is required for, whether for fattening or milk production. Again, maize and oats are essentially fattening foods, whilst decorticated cotton cake is a flesh-forming food, and it would be just as futile to use the cost per ton to compare their values as it would be to use the cost per ton to compare the values of, say, sulphate of ammonia and superphosphate.

Foods of similar composition can, however, be compared, and it is possible for the enterprising farmer to effect considerable economies, not only in the use of home-grown feeding stuffs, but particularly in the purchase of concentrated feeding stuffs, by studying the market prices.

The starch equivalent figure is a measure of the energy, heat or fat producing value of the feeding stuff, and shows the number of pounds of starch which would be required to give the same heat or energy as 100 lb. of the feeding stuff. For example, the table on page 64 states that the starch equivalent of maize meal is $81\frac{1}{2}$, or, in other words, 100 lb. of maize meal will provide as much heat or energy as $81\frac{1}{2}$ lb. of pure starch.

The protein equivalent figure shows the number of pounds of digestible flesh or muscle producing material in 100 lb. of each of the feeding stuffs listed.

PRICES OF FAT STOCK.

The following were the average prices per live cwt. of bullocks and heifers, sold at Belfast Auction Marts during each of the four weeks ended 27th October, 1936:—

Week ended.	Bullocks.		Heifers.	
	s.	d.	s.	d.
6th October	32	0	32	0
13th October	31	3	31	3
20th October	31	3	30	9
27th October	31	0	30	3

PRICES OF LIVE STOCK.

Average Prices of Live Stock at Fairs during the month of October, 1936.

Date	Fair	Calves (under 9 months)	Store Cattle	Fat Cattle (18 months and over)	Springers		Milch Cows	Store Sheep		Fat Lambs (under 12 months old)	Young Pigs
					Cows	Heifers		Feeding Lambs (under 12 months old)	Breeding Ewes		
1	Ballymoney ..	Per head	Per cwt. Live weight.	Per cwt. Live wgt.	Per head	Per head	Per head	Per head	Per head	Per head	Per head
1	Strabane ..	£ s. 6/9	28/3 to 34/-	29/-	£ s. 12 15	£ s. 12 10	£ s. 12 10	£ s. —	£ s. —	£ s. 6/6	£ s. 7/6
2	Moy ..	—	30/- to 34/-	30/-	—	—	13 0	—	*2 0	—	—
6	Omagh ..	—	27/6 to 35/-	29/-	16 15	13 15	17 0	—	*1 18/9	*1 12/6	—
8	Irvinestown ..	5 9/3	34/- to 36/-	30/-	16 10	15 0	14 10	*1 1	*2 0	*1 13	—
9	Ballygawley ..	5 18/3	31/- to 33/-	29/-	14 10	13 0	—	—	—	†1 10	1 12/6
10	Enniskillen ..	—	26/6 to 35/-	28/-	14 17/6	—	13 15	*1 15	*2 0	—	1 6
12	Limavady ..	4 2	24/- to 28/-	28/-	17 10	14 0	14 10	—	—	†1 10	1 9
		—	27/- to 33/-	29/-	20 5	—	—	*1 7/6	†1 5	—	1 6
14	Crossgar ..	—	29/- to 31/-	—	17 5	15 10	15 10	—	—	—	1 14
15	Ballynahinch ..	—	29/- to 31/-	—	17 10	15 15	16 0	—	—	—	1 15
17	Londonderry ..	—	27/6 to 34/-	29/-	15 0	—	—	—	†1 15	†1 8	1 6
17	Portadown ..	4 1/3	29/- to 33/-	29/-	15 0	15 0	16 0	—	†1 0	—	1 12/6
19	Camlough ..	4 5	22/- to 28/6	—	15 0	13 10	12 10	—	*1 16	*1 7/6	—
20	Claudy ..	—	26/- to 33/-	28/6	15 0	13 10	—	†0 12	†1 5	—	1 6
21	Lisnaskea ..	4 1/6	26/- to 31/-	31/-	15 0	14 0	14 0	—	†0 19	—	1 9/6
21	Money more ..	4 5	30/6 to 34/-	27/-	13 15	13 5	13 10	†0 14	*2 1/3	—	1 6/6
22	Fintona ..	5 9/6	32/6 to 34/-	30/-	16 10	15 10	15 10	*1 0	†1 15	*1 10	1 6/6
29	Antrim ..	5 4/6	26/- to 30/-	28/6	20 0	16 0	—	—	*1 15	—	1 10
30	Killylea ..	—	28/- to 34/-	28/6	15 10	—	14 15	*1 10	*2 0	—	—
31	Ballymena ..	6 2/6	23/- to 35/-	—	20 0	20 10	19 0	—	—	—	1 8

* Downs and Cross.

† Long Wools.

† Mountain.

IMPORTS AND EXPORTS.

Table showing the Imports and Exports through Northern Ireland ports of certain Agricultural Products during the month ended 30th September, 1936, and the nine months ended 30th September, 1936, with comparative figures for the corresponding periods in 1935.

(These figures are supplied through the courtesy of the Ministry of Commerce and are subject to revision).

COMMODITY	IMPORTS.			EXPORTS.		
	Month ended 30th September		Nine months ended 30th September	Month ended 30th September		Nine months ended 30th September
	1936	1935	1936	1936	1935	1936
Bacon cwt.	1,692	2,204	14,170	37,419	25,178	291,142
Hams cwt.	1,046	843	7,570	11,388	6,990	105,103
Pork cwt.	—	—	49	2,988	2,288	29,033
Butter cwt.	4,428	7,223	103,185	857	617	5,422
Eggs gt. hds.	5,277	4,769	57,511	258,352	241,504	2,989,415
Oat Products (inc. Oatmeal) cwt.	3,316	1,320	22,732	4,752	5,417	54,640
Potatoes tons	—	—	279	*2,569	*3,242	*169,398
Poultry cwt.	3	5	133	12,138	7,682	114,680
Grass Seeds cwt.	371	399	9,137	8,108	3,836	281,590
						226,251

There were no imports of oats through Northern Ireland ports direct from abroad either during September, 1936, or during the corresponding month of last year.

* These figures represent the quantities of potatoes inspected for shipment by the Ministry.

SHIPMENTS OF LIVE STOCK.

Statement showing the Shipments of Live Stock from Northern Ireland ports during the following periods :—
Months of Oct., 1936, Sept., 1936, and Oct., 1935; Ten Months ended 31st Oct., 1936, and 31st Oct., 1935.

PORTS OF :—	CATTLE.						SHEEP.				PIGS.		Horses	
	Fats.	Stores.	Milch Cows.	Springers.	Calves.	Total.	Fats.	Stores.	Lambs.	Total.	Fats.	Stores.		Total.
Belfast ..	5,084	6,631	1,626	124	—	13,465	5,460	100	—	5,560	2,412	—	2,412	175
Larne ..	13	1,315	—	—	11	1,339	1,384	—	—	1,384	737	111	848	29
Londonderry ..	192	8,710	72	58	147	9,179	2,644	—	—	2,644	352	10	362	1
Newry ..	16	220	—	—	—	236	273	—	—	273	—	15	15	1
Total, October, 1936 ..	5,305	16,876	1,698	182	158	24,219	9,761	100	—	9,861	3,501	136	3,637	206
Total, September, 1936	5,220	14,768	2,138	164	249	22,539	22,473	230	—	22,703	3,250	280	3,530	292
Total, October, 1935 ..	9,080	27,223	2,258	263	606	39,430	15,296	—	—	15,296	4,872	49	4,921	223
Total, Ten Months ended 31st Oct., 1936	63,583	147,106	14,224	2,001	12,693	239,607	38,826	535	109,587	148,948	37,710	820	38,530	4,446
Total, Ten Months ended 31st Oct., 1935	63,704	175,715	15,566	2,923	16,129	274,037	51,451	6	92,259	143,716	69,963	2,451	72,414	4,668

Table showing the numbers of Live Stock (1) exposed for sale, and (2) sold at 18 fairs in Northern Ireland during the months of October, 1935, and September and October, 1936:—

Description of Live Stock.	October, 1935.		September, 1936.		October, 1936.	
	Number exposed for sale.	Number sold.	Number exposed for sale.	Number sold.	Number exposed for sale.	Number sold.
Store Cattle ...	9,236	6,033	5,857	4,151	7,776	5,182
Fat Cattle ...	1,416	1,153	1,264	1,101	1,554	1,226
Dairy Cattle ...	1,682	1,292	1,431	1,123	1,540	1,141
Sheep ...	1,017	717	1,535	1,082	1,029	783
Lambs ...	1,426	1,177	1,811	1,493	772	641
Young Pigs ...	2,624	2,185	2,396	2,041	2,912	2,335

A notable feature of last month's return of trade at fairs was the appreciable increase in the number of cattle on offer. Store cattle especially were more numerous but trade was, if anything, duller than of late. The best enquiry was for large stores in forward condition and nice quality heifers suitable for breeding were eagerly sought for cross-channel requirements. Small stores were in fair local request. Prices were little changed until the arrival of rough weather at the middle of October since when they steadily declined. Trade for fat cattle also was slow but a good proportion of the offerings changed ownership at easier prices. A good sharp demand ruled for dairy stock especially for cross-channel markets and for these previous high prices were fully maintained. Sheep and lamb offerings during October showed a seasonal reduction. The quality was good and trade generally was satisfactory at unchanged prices. Breeding ewes and fat lambs were still selling well.

Young pigs were in good supply and although the demand was quiet a good volume of business was done at slightly easier rates. Brood sows were a slightly improved trade but the quality continued poor and prices for these remained at low levels.

This report will be sent free monthly as issued on application being made to the Secretary, Ministry of Agriculture, Stormont, Belfast.

11th November, 1936.

MINISTRY OF AGRICULTURE. List of Leaflets and other Publications.

LEAFLETS.

- | | |
|---|---|
| <p>No 1. Flax Seed, 1936.
 " 2. Improvement of Farm Poultry.
 " 3. Feeding for Egg Production.
 " 4. Marketing of Eggs.
 " 5. The Dishorning of Calves.
 " 6. The Packing of Apples in Standard Boxes.
 " 7. Potato Trials
 " 8. Seed Testing for Farmers.
 " 9. The Renovation of Orchards.
 " 10. Fruit Tree Pests—Capcid Bugs.
 " 11. Fruit Tree Pests—Aphides and Apple Sucker.
 " 12. Fruit Tree Pests—Caterpillars.
 " 13. Contagious Abortion in Cattle.
 " 14. Cheese-making on the Farm.
 " 15. Suitable Varieties of Fruit.
 " 16. The Feeding of Dairy Cows.
 " 17. Home Bottling of Fruits and Vegetables.
 " 18. Marketing of Dead Poultry.
 " 19. How to Feed Linseed.
 " 20. The Hatching and Rearing of Chickens.
 " 21. The Uses and Advantages of Portable Poultry Houses.
 " 22. Leather-Jacket Grubs.
 " 23. The Handling and Care of Wool.
 " 24. Fluke in Sheep.
 " 25. The Rearing and Management of Young Horses.
 " 26. Ordnance Survey Maps for Farmers.
 " 27. How to Keep Eggs Clean.
 " 28. The Construction of a Laying House for Poultry.
 " 29. The Selection and Breeding of Laying Hens.
 " 30. Coccidiosis in Poultry.
 " 31. Roup of Poultry (Fowl Pox).
 " 32. Spraying Calendar for Apple Orchards.
 " 33. The Pruning of Apple Trees.
 " 34. The Fattening of Pigs.
 " 35. Advantages of Milk Recording.
 " 36. The Raising and Fattening of Turkeys.
 " 37. The Destruction of Charlock.
 " 38. The Production of Clean Milk.
 " 39. The Laying Down and Management of Temporary Pastures.
 " 40. Blackleg, Blackquarter or Quarterill.
 " 41. The Purchase of Balanced Rations for Dairy Cows.
 " 42. Tuberculosis in Poultry.
 " 43. Results of Crop Experiments, 1935.</p> | <p>No. 44. The Breeding and Rearing of Pigs.
 " 45. Hints for Winter Egg Production.
 " 46. The Care and Management of Sheep.
 " 47. American Gooseberry Mildew.
 " 48. Potato Blight.
 " 49. Butter-making on the Farm.
 " 50. Gapes in Chickens.
 " 51. The Breeding and Rearing of Calves.
 " 52. Destruction of Ragwort or Benweed.
 " 53. Identification of Egg Supplies.
 " 54. How to have Eggs of First Quality.
 " 55. How the Fertilisers and Feeding Stuffs Act benefits the Farmer.
 " 56. Bacillary White Diarrhoea (Pullorum Disease).
 " 57. Advantages of Winter Agricultural Classes.
 " 58. The Care and Management of Breeding Bulls.
 " 59. The Production of Timber on the Farm.
 " 60. Sheep—Castration, Docking, Foot-Rot and Care of Feet.
 " 61. The Destruction of Warble Fly Maggots in Cattle.
 " 62. The Packing of Apples in Barrels.
 " 63. Seed Testing Facilities for Traders.
 " 64. The Cultivation of Vegetables.
 " 65. The Cultivation of Strawberries.
 " 66. The Construction of Piggeries.
 " 67. Ringworm.
 " 68. The Cultivation of Raspberries.
 " 69. Tree Planting for Shelter and Ornament.
 " 70. The Propagation and Maintenance of Healthy Stocks of Potatoes.
 " 71. New Pure Strains of Flax.
 " 72. Pig Production and the Pigs Marketing Scheme.
 " 73. Acarine (Isle of Wight) Disease of Bees.
 " 74. Licensing of Milk Producers and Distributors.
 " 75. Graded Milk.
 " 76. The Picking and Storing of Apples.
 " 77. Hoose or Husk in Farm Stock.
 " 78. The Construction of Cow Houses.
 " 79. White Scour in Calves.
 " 80. The Care, Management and Feeding of the Poultry Breeding Stock.</p> |
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Any of the above leaflets may be obtained free of charge and post free on application to the Secretary, Ministry of Agriculture, Stormont, Belfast.

CIRCULARS.

- No. 1. Phosphatic Fertilisers.
 " 2. Why Pay a Tax on the Horns of Cattle?
 " 3. Basic Slag.
 " 4. Smut in Oats.
 " 5. Purchase of Fertilisers and Feeding Stuffs.
 " 6. Fertilisers and Feeding Stuffs Act—General Summary.
 " 7. The Treatment of Liver Fluke.
 " 8. The ox-Warble Fly.
 " 9. Fertilisers and Feeding Stuffs Act, 1926—Revision of Regulations.

MISCELLANEOUS PUBLICATIONS.

- Store Cattle.
 Reports on Egg-Laying Tests.
 Crop Insurance.
 List of Growers of Certified Crops of Immune Varieties of Potatoes.
 List of Growers of Certified Crops of Non-Immune Varieties of Potatoes.
 The Ministry's Monthly Report.
 Register of Premium Stallions.
 Guide to the Live Stock Breeding Act (Northern Ireland), 1922.
 Guide to the Marketing of Fruit Act (Northern Ireland), 1932.

Any of the above publications may be obtained free of charge and post free on application to the Secretary, Ministry of Agriculture, Stormont, Belfast.

The following publications can be obtained from His Majesty's Stationery Office, 80 Chichester Street, Belfast, at the prices stated:—

- (1) The Annual Report of the Ministry of Agriculture for Northern Ireland. Price 2/6 net.
- (2) Annual Report upon the Agricultural Statistics of Northern Ireland. Price 2/- net.
- (3) The Journal of the Ministry of Agriculture for Northern Ireland. Price 2/6 net.
- (4) The Agricultural Output of Northern Ireland, 1925. Price 2/6 net.